STIC Scientific and Technical Information Center

Search Report
EIC 3600

STIC Database Tracking Number: 301613

To:	From:
Ella Colbert Location: KNX 4A21 Art Unit: 3696 Date: 7/16/2009 Case Serial Number: 10/807,388	Christian Miner Location: EIC3600 KNX 4B68 Phone: (571) 272-3010 christian.miner@uspto.gov

Search Notes

Dear Examiner Colbert:

Please find attached the results of your search for the above-referenced case. The search was conducted in Dialog.

I have listed *potential* references of interest in the first part of the search results. However, please be sure to scan through the entire report. There may be additional references that you might find useful.

If you have any questions about the search, or need a refocus, please do not hesitate to contact me.

Thank you for using the EIC, and we look forward to your next search!

I. Potential References of Interest

A. Dialog

Dialog eLink: Order File History
14/5/3 (Item 3 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0009571214 *Drawing available*
WPI Acc no: 1999-518137/199943
XRPX Acc No: N1999-385330
Simulating method for RF energy distribution using ray beam tracing
Patent Assignee: LUCENT TECHNOLOGIES INC (LUCE)
Inventor: FEISULLIN F; NAYLOR B; RAUKUMAR A; ROGERS L

Patent Family (1 patents, 1 countries)							
Patent Number	**Kind**	**Date**	**Application Number**	**Kind**	**Date**	**Update**	**Type**
US 5949988	A	19990907	US 199621842	P	19960716	199943	B
			US 1997838221	A	19970403		

Priority Applications (no., kind, date): US 199621842 P 19960716; US 1997838221 A 19970403

Patent Details						
Patent Number	**Kind**	**Lan**	**Pgs**	**Draw**	**Filing Notes**	
US 5949988	A	EN	18	10	Related to Provisional	US 199621842

Alerting Abstract US A
NOVELTY - The propagation of an RF **signal** within a geometric **database** model is simulated to represent the RF **signal** as a beam with magnitude and direction, by tracing a beam using a **database** model in a geometric **environment**. One or more intersections of the traced beam is determined with received locations, to determine RF energy distribution at the locations.
DESCRIPTION - The **database model** is a **3D model** formed by obtaining a binary tree representation of a geometric **environment**. The received locations are obtained within the **3D** geometric **database model**. Beam extent for the intersecting beam is determined by calculating a solid angle for the beam.
An INDEPENDENT CLAIM is also included for a system for simulating RF energy distribution.
USE - For RF energy distribution in any environment e.g. indoor, outdoor and terrain type environments using ray beam tracing and partitioning tree represented geometry.
ADVANTAGE - Results in increased computational efficiency since the geometric environment is represented as a hierarchical subdivision of space. Maintains sampling rate based on the projected area, thereby limiting arbitrarily large errors due to the subtended area approaching infinity. Affords interactive 3D visualization, hence desirable for effective placement of transmitters and receivers in dense urban environments.
DESCRIPTION OF DRAWINGS - The figure shows the overview of visually interactive **RF** energy

distribution system.

Title Terms /Index Terms/Additional Words: SIMULATE; METHOD; RF; ENERGY; DISTRIBUTE; RAY; BEAM; TRACE

Class Codes

International Patent Classification					
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**
H04B-0017/00	A	I		R	20060101
H04W-0016/18	A	I		R	20090101
H04B-0017/00	C	I		R	20060101
H04W-0016/00	C	I		R	20090101

ECLA: H04B-017/00, H04Q-007/36P, H04W-016/18
US Classification, Current Main: 703-002000; Secondary: 342-359000, 455-506000
US Classification, Issued: 395500.23, 342359, 395500.39, 455506
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J15

Dialog eLink: Order File History
22/3K/1 (Item 1 from file: 349)
DIALOG(R)File 349: PCT FULLTEXT

00499096

METHOD AND APPARATUS FOR PREDICTING SIGNAL CHARACTERISTICS IN A WIRELESS COMMUNICATION SYSTEM
PROCEDE ET APPAREIL PERMETTANT DE PREVOIR LES CARACTERISTIQUES D'UN SIGNAL DANS UN SYSTEME DE COMMUNICATION SANS FIL

Patent Applicant/Patent Assignee:

- **MOTOROLA INC**;
  ; ;

	Country	Number	Kind	Date
Patent	WO	9930448	A1	19990617
Application	WO	98US17473		19980821

	Country	Number	Kind	Date
Priorities	US	97988434		19971211

Designated States: (All protection types applied unless otherwise stated - for applications 2004+)
Language Publication Language: English
Filing Language:
Fulltext word count: 5587

Detailed Description:

...1961, incorporated by reference herein.

A propagation model for coverage prediction in the very high frequency and ultra high frequency ranges which considers uses a **three-dimensional** terrain **data bank** is presented in "A Versatile Wave Propagation Model for the VHF/UHF Range Considering Three-Dimensional Terrain," by M. Lebherz et al., IEEE Transactions on... ...et al., IEEE Transactions on Vehicular Technology, Vol. 46, No. 2, May 1997, pp. 508-517; "Simulation of Radio Relay Link Performance Using a Deterministic **3D** Wave Propagation **Model**," by N. Geng et al., **Radio** Relay **Systems**, Cll-14 October 1993, Conference Publication No. 386, IEEE, pp. 343-348; -12 Concepts and Results for 3D Digital Terrain-Based Wave Propagation Models: An...

15/5/3 (Item 1 from file: 2)
DIALOG(R)File 2: INSPEC

07918684
Title: The technical working party on mobile and terrestrial propagation format for a 3D geographical dataset
Author(s): Biddiscombe, J.; Nix, A.; Murphy, S.; Lister, D.
Author Affiliation: Rutherford Appleton Lab., Chilton, UK
Book Title: `COST 255' First International Workshop on Radiowave Propagation Modelling for SatCom Services at Ku-band and Above (ESA-WPP-146)
Inclusive Page Numbers: 139-43
Publisher: ESA, Noordwijk
Country of Publication: Netherlands
Publication Date: 1999
Conference Title: Proceedings of COST 255 Workshop on Radiowave Propagation Modeling for New Satcom Services at Ku-Band and Above
Conference Date: 28-29 Oct. 1998
Conference Location: Noordwijk, Netherlands
Number of Pages: 301
Language: English
Document Type: Conference Paper (PA)
Treatment: General or Review (G)
Abstract: The efficient **deployment** of **cellular networks** is reliant upon accurate radio planning tools. As the capacity of **cellular networks** continues to increase and cell sizes decrease, the demands on the radio planning tools become ever more critical. The cost benefits to network operators in being able to predict accurately the coverage and interference from sites is significant, ensuring that the network is managed efficiently, capacity is maximised, and quality of service is maintained. In order to build the **3D** radio planning **tools** for the future, a high-resolution **building database** must be available. The costs involved in collecting such data are considerable, and as a result it is recognised that only with an industry standard will it become cost-effective to collect data for any significant geographical region. The TWP within the UK has combined a number of network operators, academia, and government bodies to pursue the standardisation of such a format. The

document summarises the main features of this proposed standard (*3 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: cellular radio; radiowave propagation; standardisation; telecommunication network planning; telecommunication standards
Identifiers: mobile propagation; terrestrial propagation; **3D** geographical **dataset**; **cellular networks**; cost benefits; coverage; interference; network management; quality of service; capacity maximisation ; **3D** radio planning **tools**; high-resolution **building database**; industry standard; TWP; UK; format standardisation
Classification Codes: B6250F (Mobile radio systems); B5210C (Radiowave propagation); B6150P (Communication network design, planning and routing)
INSPEC Update Issue: 2001-018

Dialog eLink: USPTO Full Text Retrieval Options
15/5/6 (Item 4 from file: 2)
DIALOG(R)File 2: INSPEC

06330483
Title: A CAD system for telecommunications engineering in a GIS environment
Author(s): Menezes, V.M.; Paula Filho, W.P.; Oliveria, A.A.; Lima Filho, N.C.
Author Affiliation: Dept. of Comput. Sci., Federal Univ. of Minas Gerais, Brazil
Journal: Computers & Graphics , vol.20 , no.3 , pp.405-11
Publisher: Elsevier
Country of Publication: UK
Publication Date: May-June 1996
ISSN: 0097-8493
SICI: 0097-8493(199605/06)20:3L.405:STEE;1-H
CODEN: COGRD2
Document Number: S0097-8493(96)00009-X
U.S. Copyright Clearance Center Code: 0097-8493/96/$15.00+0.00
Language: English
Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: Arcomov/X is a GIS-based tool for **computer**-aided **design** of **mobile** telephone **systems**, which presents a good level of on-line interactivity. Engineering and geographical data are retrieved from an extended relational database, while altimetric data come from a special purpose database, developed for performance reasons. The paper presents Arcomov/X and discusses the main design decisions behind its specification and implementation (*10 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering); E (Mechanical & Production Engineering)
Descriptors: **CAD**; formal **specification**; geographic information systems; mobile radio; radiotelephony; relational **databases**; telecommunication computing
Identifiers: **CAD** system; telecommunications engineering; GIS environment; Arcomov/X GIS-based tool; **mobile** telephone **systems**; on-line interactivity; engineering data retrieval; geographical data retrieval; extended relational **database**; altimetric data; special purpose **database**; **specification**; design decisions
Classification Codes: B6150P (Communication network design, planning and routing); B6250F (Mobile radio systems); B6210D (Telephony); C7410F (Communications computing); C6160S (Spatial and pictorial databases); C6160D (Relational databases); C6110F (Formal methods); E1400 (Design)
INSPEC Update Issue: 1996-030

15/5/9 (Item 7 from file: 2)
DIALOG(R)File 2: INSPEC

05928158
Title: The application of radio propagation prediction to spectrum management and radio network design in developing countries
Author(s): Goodhead, H.D.
Author Affiliation: MIKOMTEK, CSIR, Pretoria, South Africa
Book Title: 3D Africon Conference. Africon '92 Proceedings (Cat. No.92CH3215)
Inclusive Page Numbers: 37-40
Publisher: IEEE, New York, NY
Country of Publication: USA
Publication Date: 1992
Conference Title: Proceedings of AFRICON '92
Conference Date: 22-24 Sept. 1992
Conference Location: Ezulwini Valley, Swaziland
Conference Sponsor: Region 8 IEEE
ISBN: 0 7803 0835 2
U.S. Copyright Clearance Center Code: 0 7803 0835 2/93/$3.00
Item Identifier (DOI): 10.1109/AFRCON.1992.624413
Number of Pages: xxvi+654
Language: English
Document Type: Conference Paper (PA)
Treatment: Application (A); Practical (P)
Abstract: The propagation prediction package RAP has been successfully used, within the context of developing countries, in the **design** of a wide variety of **radio systems**, including private mobile radio, paging, trunking, TV broadcasting, fixed microwave links, and **cellular radio systems**. The convenience of having an online digital **terrain database** combined with accurate prediction models available within an integrated **environment** has made iterative **design** of **radio systems** possible. This has resulted in considerable saving in time, and in designs having the correct balance between cost, performance, and spectrum utilization (*0 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering); E (Mechanical & Production Engineering)
Descriptors: **CAD**; digital simulation; iterative methods; **radio networks**; radio spectrum management; radiowave propagation; software packages; telecommunication computing
Identifiers: software; computer simulation; radio propagation prediction; spectrum management; **radio network design**; developing countries ; RAP; private mobile radio; paging; trunking; TV broadcasting; fixed microwave links; cellular radio; online digital **terrain database**; integrated **environment**; iterative design; cost; performance
Classification Codes: B5210C (Radiowave propagation); B6410 (Legislation, frequency allocation and spectrum pollution); B6250 (Radio links and equipment); C7410F (Communications computing); E1400 (Design); E3644H (Audio and video equipment manufacturing)
INSPEC Update Issue: 1995-015
Copyright: 1995, IEE

28/5/7 (Item 6 from file: 2)
DIALOG(R)File 2: INSPEC

06310721
Title: A field strength prediction model for small cells mobile systems using a 3-D building database
Author(s): Perucca, M.
Author Affiliation: CSELT, Torino, Italy
Inclusive Page Numbers: 34-41
Publisher: Tech. Univ. Eindhoven, Eindhoven
Country of Publication: Netherlands

Publication Date: 1995
Conference Title: Proceedings IEEE Third Symposium on Communications and Vehicular Technology in the Benelux
Conference Date: 25-26 Oct. 1995
Conference Location: Eindhoven, Netherlands
Editor(s): Smulders, P.; van den Meerendonk, H.
Number of Pages: 209
Language: English
Document Type: Conference Paper (PA)
Treatment: Theoretical or Mathematical (T); Experimental (X)
Abstract: Cells with **reduced size** (few km) require propagation **models** that take into account the building structures. In case base station antennas are installed just above the roof-top of a building or, more generally, at the same height of the surrounding buildings ("small cells"), the path loss is determined mainly by diffraction and scattering phenomena, occurring at the roof-tops encountered by the propagating wave. A new model for the computation of the field strength in a small cells environment is presented. It is based on a simplified evaluation of the building diffraction: buildings are considered as knife edges and Deygout's method is utilized for the diffraction loss evaluation. Despite this simplification, with respect to other models, which are based on average **parameters** and do not consider the real building structures, the new model is easily applicable to any urban **structure**, provided that a suitable **3-D** topographical **data base** (with adequate horizontal and vertical resolution, 1 to 2 m) is available (*7 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: cellular radio; electromagnetic fields; electromagnetic wave diffraction; land mobile radio; UHF radio propagation
Identifiers: field strength prediction **model**; small cells mobile **systems**; **3-D building database**; propagation **models**; **base station** antennas; roof-top; **path** loss; diffraction; scattering; knife edges; Deygout's method; diffraction loss evaluation; urban **structure**; **3-D** topographical **data base**; 1795 MHz
Classification Codes: B6250F (Mobile radio systems); B5100 (Electric and magnetic fields); B5210C (Radiowave propagation)
Numerical Indexing: frequency: 1.795E+09 Hz
INSPEC Update Issue: 1996-026

28/5/8 (Item 7 from file: 2)
DIALOG(R)File 2: INSPEC

06231280
Title: A comparison between the performance of FHSS and DSSS for wireless LANs using a 3D ray tracing program
Author(s): Falsafi, A.; Pahlavan, K.
Author Affiliation: Center for Wireless Inf. Network Studies, Worcester Polytech. Inst., MA, USA
Book Title: 1995 IEEE 45th Vehicular Technology Conference. Countdown to the Wireless Twenty-First Century (Cat. No.95CH35821 and 95CB35821)
Inclusive Page Numbers: 569-73 vol.2
Publisher: IEEE, New York, NY
Country of Publication: USA
Publication Date: 1995
Conference Title: 1995 IEEE 45th Vehicular Technology Conference. Countdown to the Wireless Twenty-First Century
Conference Date: 25-28 July 1995
Conference Location: Chicago, IL, USA
ISBN: 0 7803 2742 X
U.S. Copyright Clearance Center Code: 0 7803 2742 X/95/$4.00
Item Identifier (DOI): 10.1109/VETEC.1995.504932
Part: vol.2
Number of Pages: 2 vol. xxviii+1010
Language: English
Document Type: Conference Paper (PA)

Treatment: Practical (P); Theoretical or Mathematical (T)
Abstract: A **3D** ray tracing **program** developed at the Center for **Wireless** Information **Network** Studies at Worcester Polytechnic Institute for the simulation of micro-cellular radio propagation is used to generate the impulse response between two nodes of a **wireless LAN**, when the transmitter and receiver are located at arbitrary points within an office area. This time-domain channel response is then used to compare the performance of systems employing frequency-hopping and direct-sequence spread spectrum modulation. When averaged over many locations for the transmitter and/or receiver, this yields a site-specific comparison of the two modulation strategies. Performance **criteria** are error and outage probability as a function of transmitted power and data rate (*10 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: error statistics; frequency hop communication; indoor radio; multipath channels; pseudonoise codes; ray tracing; Reed-Solomon codes; spread spectrum communication; time-domain analysis; transient response; **wireless LAN**
Identifiers: performance; FHSS; DSSS; **wireless LANs**; **3D** ray tracing **program**; simulation; Reed Solomon codes; impulse response; office area; time-domain channel response; frequency-hopping; direct-sequence spread spectrum modulation; receiver; transmitter; site-specific comparison; outage probability; error probability; transmitted power; data rate
Classification Codes: B6250 (Radio links and equipment); B6210L (Computer communications); B6150E (Multiple access communication); B5210C (Radiowave propagation); B6120B (Codes)
INSPEC Update Issue: 1996-013

Dialog eLink: USPTO Full Text Retrieval Options
28/5/9 (Item 8 from file: 2)
DIALOG(R)File 2: INSPEC

06167023
Title: A three-dimensional propagation model in comparison with measurements
Author(s): Liebenow, U.
Author Affiliation: Res. Centre, Deutsche Telekom AG, Darmstadt , Germany
Journal: ITG-Fachberichte , no.135 , pp.43-50
Publisher: VDE-Verlag
Country of Publication: Germany
Publication Date: 1995
Conference Title: Mobile Kommunikation (Mobile Communication)
Conference Date: 26-28 Sept. 1995
Conference Location: Neu-Ulm, Germany
ISSN: 0341-0196
SICI: 0341-0196(1995)135L.43:TDPM;1-U
CODEN: ITGFEY
Language: German
Document Type: Conference Paper in Journal (PA)
Treatment: Theoretical or Mathematical (T); Experimental (X)
Abstract: A model is presented on the basis of a topographical database to supersede earlier attempts and describe the multipath propagation of radio waves over terrain. As well as improving the forecasting of local average value of field attenuation or reception quality, the method allows estimation of delay-power density profiles and system-dependent quality **parameters** derivable from them. Acceptance of the model is confirmed by comparison with comprehensive propagation measurements performed in the Garmisch-Partenkirchen area with a **broadband system** at 919 and 1873 MHz (*14 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: delays; field strength measurement; geographic information systems; multipath channels; radio reception; technological forecasting; telecommunication computing; UHF radio propagation
Identifiers: UHF; **three-dimensional** propagation **model**; topographical **database**; multipath propagation; field attenuation; reception quality; delay-power density profiles; system-dependent quality **parameters**; propagation measurements; **broadband system** ; 919 MHz; 1.873 GHz
Classification Codes: B5210C (Radiowave propagation); B7310B (Voltage measurement)

Numerical Indexing: frequency: 9.19E+08 Hz; frequency: 1.873E+09 Hz
INSPEC Update Issue: 1996-003

28/5/10 (Item 9 from file: 2)
DIALOG(R)File 2: INSPEC

05682173
Title: BER prediction for GSM-systems using digital terrain data
Author(s): Kurner, T.; Becker, T.; Cichon, D.J.; Wiesbeck, W.
Author Affiliation: Inst. fur Hochstfrequenztechink und Elektronik, Karlsruhe Univ., Karlsruhe, Germany
Book Title: International Conference on Telecommunications 1994. Bridging East and West Through Communications. Final Programme and Proceedings
Inclusive Page Numbers: 55-8
Publisher: IEEE, New York, NY
Country of Publication: USA
Publication Date: 1993
Conference Title: Proceedings of International Conference on Telecommunications
Conference Date: 10-12 Jan. 1994
Conference Location: Dubai, United Arab Emirates
Conference Sponsor: IEEE IEE Kings Coll., London Dubai Chamber Commerce & Ind. et al
Number of Pages: 320
Language: English
Document Type: Conference Paper (PA)
Treatment: Theoretical or Mathematical (T)
Abstract: In GSM-systems not only the prediction of fieldstrength levels is of main interest. Additional wideband **parameters** such as the delay spread are required in a GSM-planning tool. Furthermore the BER of the unprotected radio channel is an important **parameter**. In this paper, these **parameters** are obtained by **3D** ray optical wave propagation **models**, which consider multipath propagation using digital **terrain databases**. Based on the predictions, both the channel impulse responses and the mean value of the BER of the unprotected radio channel are computed for GMSK-modulation with incoherent detection (*8 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: delays; error statistics; minimum shift keying; **mobile radio systems**; radiowave propagation; telecommunication channels; transient response; tropospheric electromagnetic wave propagation
Identifiers: BER prediction; GSM-systems; digital terrain data; wideband **parameters**; delay spread; GSM-planning **tool**; unprotected radio channel; **3D** ray optical wave propagation **models**; multipath propagation; **digital terrain databases**; channel impulse responses; BER mean value; GMSK-modulation; incoherent detection
Classification Codes: B6250F (Mobile radio systems); B5210C (Radiowave propagation)
INSPEC Update Issue: 1994-020

Dialog eLink: USPTO Full Text Retrieval Options
28/5/11 (Item 10 from file: 2)
DIALOG(R)File 2: INSPEC

04763187
Title: Interactive graphic procedure for broadcasting frequency management making use of terrain data bank on high-definition CAD workstations
Author(s): Del Duce, V.; Isola, C.; Virgadamo, G.

Journal: Telecommunication Journal (English Edition) , vol.57 , no.9 , pp.620-9
Country of Publication: Switzerland
Publication Date: Sept. 1990
ISSN: 0497-137X
CODEN: TCJOA6
Language: English
Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: The Technical Department of RAI-Radiotelevisione Italiana has been working for a long time at the problem of broadcasting frequency planning in conditions of very high-density spectrum occupancy. Therefore, it has been decided to create some informatic instruments allowing more precise and faster results and documentation even in the light of an accentuated increase in the number of the transmitting stations considered. To this end, in 1984, the idea of utilizing graphic workstations created for **computer-aided design** (**CAD**) was conceived. An interactive graphic program has been carried out on the above workstations to integrate the already existing planning support programs with a graphic management of the territory and to show the results in a graphic form allowing a concise sight and a more immediate comprehension. The specialist can therefore make some preliminary surveys on the territory taking into account the existing situation, record his decisions in an interactive way, visualize the results of the compatibility calculations and eventually modify his previous decisions (*5 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering); E (Mechanical & Production Engineering)
Descriptors: **CAD**; engineering graphics; engineering workstations; frequency allocation; interactive systems; **radio** broadcasting; telecommunication **network** management; telecommunications computing
Identifiers: **terrain data bank**; high-**definition CAD** workstations; Technical Department of RAI; Radiotelevisione Italiana; broadcasting frequency planning; interactive graphic program
Classification Codes: B6210 (Telecommunication applications); B0140B (Planning); C7410F (Communications computing); C5540 (Terminals and graphic displays); C6130B (Graphics techniques); E0120D (Planning); E1400 (Design)
INSPEC Update Issue: 1990-024

34/5/1 (Item 1 from file: 2)
DIALOG(R)File 2: INSPEC

07440232
Title: Predicting in-building coverage for microcells and small macrocells
Author(s): Rajala, J.; Sipila, K.; Heiska, K.
Author Affiliation: Nokia Telecommun., Finland
Book Title: 1999 IEEE 49th Vehicular Technology Conference (Cat. No.99CH36363)
Inclusive Page Numbers: 180-4 vol.1
Publisher: IEEE, Piscataway, NJ
Country of Publication: USA
Publication Date: 1999
Conference Title: 1999 IEEE 49th Vehicular Technology Conference. Moving Into a New Millenium
Conference Date: 16-20 May 1999
Conference Location: Houston, TX, USA
ISBN: 0 7803 5565 2
U.S. Copyright Clearance Center Code: 0 7803 5565 2/99/$10.00
Item Identifier (DOI): 10.1109/VETEC.1999.778042
Part: vol.1
Number of Pages: 3 vol. xxx+2530
Language: English
Document Type: Conference Paper (PA)
Treatment: Theoretical or Mathematical (T); Experimental (X)
Abstract: A new model is presented for predicting the field strength inside buildings for microcell and small macrocell base stations. The field strength is calculated by an outdoor-->indoor model, which uses the field estimates in the points just

outside the boundary line of the building at same height, calculated by a **three dimensional**, ray-based outdoor **model**. The predictions by the new model are compared with measurements (*10 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: field strength measurement; indoor radio; microcellular radio; radiowave propagation
Identifiers: **in-building** coverage prediction; microcells; small macrocells; field strength prediction; base stations; field estimates; **3D** ray-based outdoor **model**; measurements; indoor model; **cellular network** planning; propagation models
Classification Codes: B5210C (Radiowave propagation); B6250F (Mobile radio systems); B7310B (Voltage measurement)
INSPEC Update Issue: 1999-049

34/5/2 (Item 2 from file: 2)
DIALOG(R)File 2: INSPEC

06978966
Title: The call performance for body-centered-cubic cell and cubic cell in 3-dimensional personal communication system
Author(s): Yu Hu; Bo Lan; Fan Lu; Teng Joon Lim
Author Affiliation: Inst. of Appl. Phys., Univ. of Electron. Sci. & Technol. of China, Chengdu, China
Book Title: Proceedings of ICICS, 1997 International Conference on Information, Communications and Signal Processing. Theme: Trends in Information Systems Engineering and Wireless Multimedia Communications (Cat. No.97TH8237)
Inclusive Page Numbers: 1790-4 vol.3
Publisher: IEEE, New York, NY
Country of Publication: USA
Publication Date: 1997
Conference Title: Proceedings of 1st International Conference on Information Communications and Signal Processing
Conference Date: 9-12 Sept. 1997
Conference Location: Singapore
ISBN: 0 7803 3676 3
U.S. Copyright Clearance Center Code: 0 7803 3676 3/97/$10.00
Item Identifier (DOI): 10.1109/ICICS.1997.652304
Part: vol.3
Number of Pages: 3 vol. xxxiv+1819
Language: English
Document Type: Conference Paper (PA)
Treatment: Theoretical or Mathematical (T)
Abstract: With the appearance of the microcell and **in-building** systems, the **cellular mobile networks** and the personal communication systems (PCS) have been established in the **three- dimensional** space. A traffic **model** and analysis for both the cubic and proposed body-centered-cubic (BCC) cells with handoff are examined. The blocking probability and the handoff attempt failure probability are derived and presented. In this study, three schemes for call traffic handling are considered. One is nonprioritized and two are priority oriented. Fixed channel assignment is considered. In the nonprioritized scheme, the base stations make no distinction between new call attempts and handoff attempts. Attempts which find all channels occupied are cleared. In the two priority schemes, a fixed number of channels in each cell are reserved exclusively for handoff calls. Appropriate analytical models and criteria are developed and used to derive the performance characteristics (*14 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: cellular radio; frequency allocation; indoor radio; land mobile **radio**; personal communication **networks**; probability; telecommunication traffic
Identifiers: call performance; body-centered-cubic cell; cubic cell; **3D** personal communication **system**; PCS; **in-building** systems; **cellular mobile networks**; microcell; traffic model; blocking probability; handoff attempt failure probability; call traffic handling; priority oriented scheme; nonprioritized scheme; new call attempts
Classification Codes: B6250F (Mobile radio systems); B0240Z (Other topics in statistics)
INSPEC Update Issue: 1998-029

Copyright: 1998, IEE

34/5/3 (Item 3 from file: 2)
DIALOG(R)File 2: INSPEC

06296835
Title: A cell shape for three-dimensional personal communication system - cubooctahedron
Author(s): Lu Fan; Gunagming Cha; Zhengmao Li; Bo Lan
Author Affiliation: Inst. of Commun. & Inf. Syst., Univ. of Electron. Sci. & Technol. of China, Chengdu, China
Book Title: 1995 Fourth IEEE International Conference on Universal Personal Communications. Record. Gateway to the 21st Century (Cat. No.95TH8128)
Inclusive Page Numbers: 288-91
Publisher: IEEE, New York, NY
Country of Publication: USA
Publication Date: 1995
Conference Title: Proceedings of ICUPC '95 - 4th IEEE International Conference on Universal Personal Communications
Conference Date: 6-10 Nov. 1995
Conference Location: Tokyo, Japan
ISBN: 0 7803 2955 4
U.S. Copyright Clearance Center Code: 0 7803 2955 4/95/$4.00
Item Identifier (DOI): 10.1109/ICUPC.1995.496906
Number of Pages: 991
Language: English
Document Type: Conference Paper (PA)
Treatment: Theoretical or Mathematical (T)
Abstract: With the appearance of the microcell and **in-building** systems, **cellular systems** and the personal communication **systems** (PCS) have been established in **three dimensional** space. In this paper, a new concept of base station lattice (BSL) and co-channel reuse lattice (CCRL) is proposed. Sphere covering, a new method of selecting the cell shape for the three-dimensional (3-D) case, is explored. As compared with the cubic cell, the body-centered-cubic (BCC) cell, i.e. the cubooctahedron shape cell is the most economic one (*11 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: cellular radio; frequency allocation; indoor radio; land mobile **radio**; personal communication **networks**; radio spectrum management
Identifiers: **three-dimensional** personal communication **system**; cell shape; cubooctahedron; microcell; **in-building** system; base station lattice; co-channel reuse lattice; sphere covering
Classification Codes: B6250F (Mobile radio systems); B6150P (Communication network design, planning and routing)
INSPEC Update Issue: 1996-024
Copyright: 1996, IEE

28/3,K/1 (Item 1 from file: 15)
DIALOG(R)File 15: ABI/Inform(R)

06187654 29824695
Check the accuracy of a system simulator

Kratzet, Stephen H
Microwaves & RF v37n5 pp: 175
May 1998
ISSN: 0745-2993 **Journal Code:** STRF

Word Count: 1016
Text:
SOFTWARE packages are useful tools in estimating the performance of a complex system prior to prototype construction. Most commercial system-level **computer-aided-engineering** (CAE) programs contain useful models of analog and digital components that can accurately duplicate the .hardware performance found in **cellular systems**, personal-communications-services (PCS) systems, and multiple-channel receiver applications. In order to gain confidence in a system simulation, however, the accuracy of a CAE...

28/3,K/2 (Item 2 from file: 15)
DIALOG(R)File 15: ABI/Inform(R)

01361020 00-12007
The changing art of wireless system engineering

Drucker, Elliott H
Cellular Business v14n1 pp: 56-60
Jan 1997
ISSN: 0741-6520 **Journal Code:** CLB
Word Count: 1963

Abstract:
The evolution of the art of **cellular systems** engineering is in no small measure responsible for the commercial success of the wireless industry. In early systems, engineers learned that while network layout on ...

...it fell short of providing an optimal systems design. In the late 1980s, the carriers' hard-pressed systems engineering staffs began to rely heavily on **computer-aided design.** Cellular coverage prediction programs proved to be effective in locating sites to solve coverage problems, but they were somewhat less helpful in engineering the cell...

B. Additional Resources Searched

LexisNexis:

No significant results.

II. Inventor Search Results from Dialog

Dialog eLink: Order File History
14/5/1 (Item 1 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0012938127 *Drawing available*
WPI Acc no: 2003-014747/200301
Related WPI Acc No: 2003-016272; 2003-419784; 2006-181861
XRPX Acc No: N2003-010752
RF signal property modeling system for installation of wireless communication networks, periodically determines location of transceiver in facility and embeds associated RF signal properties with 3D model of facility
Patent Assignee: WIRELESS COMMUNICATIONS INC (WIRE-N)
Inventor: RAPPAPORT T S; SKIDMORE R R

Patent Family (1 patents, 1 countries)							
Patent Number	**Kind**	**Date**	**Application Number**	**Kind**	**Date**	**Update**	**Type**
US 6442507	B1	20020827	US 1998221985	A	19981229	200301	B

Priority Applications (no., kind, date): US 1998221985 A 19981229

Patent Details					
Patent Number	**Kind**	**Lan**	**Pgs**	**Draw**	**Filing Notes**
US 6442507	B1	EN	12	5	

Alerting Abstract US B1
NOVELTY - A mobile transceiver (15) measures the properties of RF signals at several locations within a facility. A portable **computer** (12) representatively displays the **facility** in a **3D model**, maintains a **3D model database** and runs a **software program** to periodically determine the location of the transceiver. The measured RF signal properties at the location is embedded with the **3D model** and displayed.
USE - For creating **3D model** of RF **signal properties**, wireless communication **system signal properties** and **data network** throughput **properties** measured within a **facility** such as multi-story **buildings**, for **installation** and management of **wireless networks** such as LAN, WAN, **cellular** phone **networks** such as PBX, or local loops.
ADVANTAGE - The measurement acquisition method enables measurements to be acquired from several locations and floors of buildings in a single run by entering the location at the time of measurement recording. Also enables modeling of measured throughput properties in useful ways to indicate best throughput time locations, and degradations/improvement of throughput.
DESCRIPTION OF DRAWINGS - The figure shows a schematic representation of RF signal property modeling apparatus.
12 Portable computer
15 mobile transceiver

Title Terms /Index Terms/Additional Words: RF; SIGNAL; PROPERTIES; SYSTEM; INSTALLATION ; WIRELESS; COMMUNICATE; NETWORK; PERIOD; DETERMINE; LOCATE; TRANSCEIVER; FACILITY; EMBED; ASSOCIATE; MODEL

ECLA: H04B-017/00F, H04W-016/20
ICO: T04B-017:00B1R, T04B-017:00B1S, T04B-017:00B3, T04Q-007:36P
US Classification, Issued: 702186, 342463
File Segment: EPI;
DWPI Class: S01; S02; T01; W01; W02
Manual Codes (EPI/S-X): S01-G08A; S02-A06C; T01-C03C; T01-J10C4; T01-J15A4; T01-S02; W01-A06B5A; W01-

A06C4; W01-A06D; W02-C03E5; W02-C05A; W02-G02A1

Dialog eLink: Order File History
39/5/1 (Item 1 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0014506944 *Drawing available*
WPI Acc no: 2004-688864/200467
Related WPI Acc No: 2001-389465; 2003-862955; 2004-246845; 2004-345318; 2004-560846; 2004-641281; 2004-688139; 2007-558346
XRPX Acc No: N2004-545730
Data manipulating method for creating environmental database, involves determining whether object information is sufficient to generate definition of environment, and generating formatted data in transmitting form used by specific model
Patent Assignee: RAPPAPORT T (RAPP-I); SKIDMORE R (SKID-I)
Inventor: **RAPPAPORT T**; **SKIDMORE R**

Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20040181374	A1	20040916	US 1999318841	A	19990526	200467	B
			US 2000633120	A	20000804		
			US 2004809466	A	20040326		

Priority Applications (no., kind, date): US 1999318841 A 19990526; US 2000633120 A 20000804; US 2004809466 A 20040326

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 20040181374	A1	EN	21	9	C-I-P of application	US 1999318841
					Division of application	US 2000633120
					Division of patent	US 6721769

Alerting Abstract US A1
NOVELTY - The objects defining environment of floors, walls, partitions, buildings, complexes, terrain, foliage, are created and formatted. The objects are verified to determine whether the object information is sufficient to generate **definition** of environment. A set of formatted data is generated in the transmitting form usable by engineering planning model or other application.
DESCRIPTION - An INDEPENDENT CLAIM is also included for data manipulating apparatus.
USE - For manipulating data, drawings, electronic files for creating three-dimensional (3-D) environmental **databases** for generating **definition** of different physical **environments** such as city, **building**, terrain, campus, floors within building, foliage and objects in indoor and outdoor settings, and

used with **wireless** communication **system** modeling product such as **cellular** telephone **system** modeling product, paging system modeling product, engineering planning and automated **design** products, **computer aided design** (**CAD**) product, also for use in planning **positioning** of components, designing, **installing** and optimizing **wireless** communication **system**, for determining radio frequency (RF) coverage within buildings and between other communication systems in different locations.
ADVANTAGE - Enables to efficiently generate **definition** of the building.
DESCRIPTION OF DRAWINGS - The figure shows a flow diagram illustrating generation of drawings from pre-existing **computer aided design** (**CAD**) drawings.

Title Terms /Index Terms/Additional Words: DATA; MANIPULATE; METHOD; ENVIRONMENT; DATABASE; DETERMINE; OBJECT; INFORMATION; SUFFICIENT; GENERATE; DEFINE; TRANSMIT; FORM; SPECIFIC; MODEL

Class Codes

International Patent Classification					
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**
G06F-0017/30	A	I		R	20060101
G06F-0017/30	C	I		R	20060101

ECLA: G06F-017/30M
US Classification, Current Main: 703-001000; Secondary: 707-E17019
US Classification, Issued: 7031
File Segment: EPI;
DWPI Class: T01; T06; W01; W02
Manual Codes (EPI/S-X): T01-J05B4P; T01-J10C4; T01-J15H; T06-A04A4; W01-B05A1A; W02-C03C1A; W02-C03E5

39/5/2 (Item 2 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0014450318 *Drawing available*
WPI Acc no: 2004-641281/200462
Related WPI Acc No: 2001-389465; 2003-862955; 2004-246845; 2004-345318; 2004-560846; 2004-688139; 2004-688864; 2007-558346
XRPX Acc No: N2004-507058
Data manipulation method for wireless communication system, involves generating set of formatted data from three- dimensional building structure for engineering planning model

Patent Assignee: RAPPAPORT T (RAPP-I); SKIDMORE R (SKID-I)
Inventor: **RAPPAPORT T**; **SKIDMORE R**

Patent Family (1 patents, 1 countries)							
Patent Number	**Kind**	**Date**	**Application Number**	**Kind**	**Date**	**Update**	**Type**
US 20040162840	A1	20040819	US 1999318841	A	19990526	200462	B
			US 2000633120	A	20000804		
			US 2004776505	A	20040212		

Priority Applications (no., kind, date): US 1999318841 A 19990526; US 2000633120 A 20000804; US 2004776505 A 20040212

Patent Details						
Patent Number	**Kind**	**Lan**	**Pgs**	**Draw**	**Filing Notes**	
US 20040162840	A1	EN	21	9	C-I-P of application	US 1999318841
					Division of application	US 2000633120
					Division of patent	US 6721769

Alerting Abstract US A1
NOVELTY - The method involves creating and formatting objects defining an environment of floors, walls, partitions, buildings, or other sites or obstructions, to form a three-dimensional building structure. The building structure is notified to a user, and set of formatted data is generated from the building structure for engineering planning model and management tools for in-building or micro cell **wireless systems**.
DESCRIPTION - An INDEPENDENT CLAIM is also included for apparatus for manipulating data from any environment.
USE - For manipulating drawings and electronic files to build database for use in planning **positioning** of components and for designing, **installing** and optimizing **wireless** communication **system** engineering, planning and management tools for in-building or micro cell **wireless system**.
ADVANTAGE - Enables manipulating drawings and electronic files to build databases for use with modeling and engineering planning and automated design products, effectively.
DESCRIPTION OF DRAWINGS - DESCRIPTION OF DRAWING - The figure shows the flow diagram explaining the data manipulation method.

Title Terms /Index Terms/Additional Words: DATA; MANIPULATE; METHOD; WIRELESS; COMMUNICATE; SYSTEM; GENERATE; SET; THREE; DIMENSION; BUILD; STRUCTURE; ENGINEERING; PLAN; MODEL

Class Codes

International Patent Classification					
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**
G06F-0017/30	A	I		R	20060101
G06F-0017/30	C	I		R	20060101

ECLA: G06F-017/30M
US Classification, Current Main: 707-100000; Secondary: 707-E17019
US Classification, Issued: 707100
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-C03C; T01-J05A2C; T01-N01D

Dialog eLink: Order File History
39/5/4 (Item 4 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0013332364 *Drawing available*
WPI Acc no: 2003-419784/200339
Related WPI Acc No: 2003-014747; 2003-016272; 2006-181861
XRPX Acc No: N2003-335163
Indoor signal property measuring apparatus in building, measures signal properties at different locations of transceiver and embedded them within three-dimensional model of building
Patent Assignee: RAPPAPORT T S (RAPP-I); SKIDMORE R R (SKID-I); WIRELESS VALLEY COMMUNICATIONS INC (WIRE-N)
Inventor: **RAPPAPORT T S**; **SKIDMORE R R**

Patent Family (2 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20030055604	A1	20030320	US 1998221985	A	19981229	200339	B
			US 2002287026	A	20021104		
US 7096160	B2	20060822	US 2002287026	A	20021104	200656	E

Priority Applications (no., kind, date): US 1998221985 A 19981229; US 2002287026 A 20021104

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 20030055604	A1	EN	44	5	Continuation of application	US 1998221985
					Continuation of patent	US 6442507

Alerting Abstract US A1 NOVELTY - A display unit (14)

displays **three-dimensional model** in facility such as buildings. The location of movable transceiver within a building is determined. A wheeled distance measuring device (18) measures signal **properties** at different locations and the signal **properties** are embedded within **three- dimensional model** of building.
DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1. computer **database** model **creating** method; and
2. **signal properties** recording method.

USE - For measuring signal **properties** in indoor **mobile wireless** communication **system** such as **local area** network (**LAN**), wide area **network** (WAN), **cellular phone networks** such as PB **or** local **loops** within facilities such as building.
ADVANTAGE - Since signal **properties** are measured at different location **wireless** communication **system** are **designed** with **a** simple **structure**.
DESCRIPTION OF DRAWINGS - The figure shows a schematic view of indoor signal **property** measuring apparatus.
14 display unit
18 wheeled distance measuring device

Title Terms /Index Terms/Additional Words: INDOOR; SIGNAL; **PROPERTIES**; MEASURE; APPARATUS; BUILD; LOCATE; TRANSCEIVER; EMBED; THREE; DIMENSION; MODEL

ECLA: H04B-017/00F, H04W-016/20
ICO: T04B-017:00B1R, T04B-017:00B1S, T04B-017:00B3, T04Q-007:36P
US Classification, Current Main: 702-186000
US Classification, Issued: 702186, 702186
File Segment: EPI;
DWPI Class: T01; W01
Manual Codes (EPI/S-X): T01-C04; T01-J08F; T01-J10C4; W01-A06A; W01-A06B5; W01-A06C4; W01-B05A1A; W01-C08C

39/5/9 (Item 9 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0010774939 *Drawing available*
WPI Acc no: 2001-389465/200141
Related WPI Acc No: 2003-862955; 2004-246845; 2004-345318; 2004-560846; 2004-641281; 2004-688139; 2004-688864; 2007-558346
XRPX Acc No: N2001-286483
Data manipulating method from any environment in the world, involves creating and formatting

several objects and verifying sufficiency of objects to ensure useful definition of environment
Patent Assignee: RAPPAPORT T S (RAPP-I); SKIDMORE R R (SKID-I); WIRELESS VALLEY COMMUNICATIONS INC (WIRE-N)
Inventor: **RAPPAPORT T S**; **SKIDMORE R R**

Patent Family (5 patents, 90 countries)							
Patent Number	**Kind**	**Date**	**Application Number**	**Kind**	**Date**	**Update**	**Type**
WO 2000073874	A2	20001207	WO 2000US12910	A	20000511	200141	B
AU 200050043	A	20001218	AU 200050043	A	20000511	200141	E
US 20040186847	A1	20040923	US 1999318841	A	19990526	200463	E
			US 2004809687	A	20040326		
US 6850946	B1	20050201	US 1999318841	A	19990526	200511	E
US 20050131619	A1	20050616	US 1999318841	A	19990526	200540	E
			US 2004809687	A	20040326		
			US 200544005	A	20050128		

Priority Applications (no., kind, date): US 1999318841 A 19990526; US 2004809687 A 20040326; US 200544005 A 20050128

Patent Details						
Patent Number	**Kind**	**Lan**	**Pgs**	**Draw**	**Filing Notes**	
WO 2000073874	A2	EN	39	7		
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
Regional Designated States,Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW					
AU 200050043	A	EN			Based on OPI patent	WO 2000073874
US 20040186847	A1	EN			Continuation of application	US 1999318841
US 20050131619	A1	EN			Continuation of application	US 1999318841
					Continuation of application	US 2004809687
					Continuation of patent	US 6850946

Alerting Abstract WO A2
NOVELTY - Objects defining an environment of floors, walls, etc, are created and formatted. The sufficiency of the objects is verified to ensure useful **definition** of the environment. The user is notified of results of verification of sufficiency. A set of formatted data is generated in a form transportable to usable by engineering model or other application.
DESCRIPTION - The method involves inputting existing data, vectors or drawing objects partially or

fully describing the environment. Extraneous drawing objects are removed to simplify the **definition** of the environment. A 3D view of the environment is rendered. An INDEPENDENT CLAIM is also included for device for manipulating data from any **environment** in the world to construct a **database**.
USE - For manipulating data from any environment in the word e.g. cities, buildings, campuses, floors within **building**, objects in outdoor setting, to construct electronic **building database** to generate **definitions** of the user's **building** and **site parameters** and to use with **wireless** communication **system** modeling and engineering planning products, for **cellular** telephone **systems**, paging systems, new **wireless systems** e.g. personal communication network or **wireless local area network**.
ADVANTAGE - Provides a method to manipulate drawings and electronic files to build databases for use in planning the **positioning** of components and for designing, **installing** and optimizing **wireless** communication **system**. Provides simplified mechanism for collecting and editing the information in readily usable form.
DESCRIPTION OF DRAWINGS - The figure shows the flow diagram explaining data manipulating method.

Title Terms /Index Terms/Additional Words: DATA; MANIPULATE; METHOD; ENVIRONMENT; WORLD ; FORMAT; OBJECT; VERIFICATION; SUFFICIENT; ENSURE; USEFUL; DEFINE

Class Codes

International Patent Classification					
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**
G06F-0017/30	A	I		R	20060101
G06F-0017/30	C	I		R	20060101

ECLA: G06F-017/30M
US Classification, Current Main: 701-101000, 707-101000; Secondary: 707-E17019
US Classification, Issued: 707101, 701101, 70710, 707101
File Segment: EPI;
DWPI Class: T01; W01
Manual Codes (EPI/S-X): T01-J05B4P; T01-J10B3A; T01-J10C4; T01-J11C; W01-A06B5A; W01-A06C4

Dialog eLink: Order File History
37/5/1 (Item 1 from file: 349)
DIALOG(R)File 349: PCT FULLTEXT

00931300

METHOD AND SYSTEM FOR MODELING AND MANAGING TERRAIN, BUILDINGS, AND INFRASTRUCTURE
PROCEDE ET SYSTEME POUR MODELISER ET GERER DU TERRAIN, DES IMMEUBLES ET UNE INFRASTRUCTURE

Patent Applicant/Patent Assignee:

- **WIRELESS VALLEY COMMUNICATIONS INC**; 104 Hubbard Street, P.O. Box 10727, Blacksburg, VA 24062
  US; US(Residence); US(Nationality)

Legal Representative:

- **WHITHAM Michael E(agent)**
  Whitham, Curtis & Christofferson, P.C., 11491 Sunset Hills Road, Suite 340, Reston, VA 20190; US;

	Country	Number	Kind	Date
Patent	WO	200265346	A1	20020822
Application	WO	2002US4036		20020212
Priorities	US	2001268360		20010214
	US	2001954273		20010918

Designated States: (All protection types applied unless otherwise stated - for applications 2004+)

[EP] AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; TR;

[OA] BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG;

[AP] GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZM; ZW;

[EA] AM; AZ; BY; KG; KZ; MD; RU; TJ; TM;

Main International Patent Classes (Version 7):

IPC	Level
G06F-017/50	Main

Language Publication Language: English
Filing Language: English
Fulltext word count: 15317

English Abstract:

A method and system for creating, using, and managing a **three-dimensional digital model** of the physical environment combines outdoor terrain elevation and land-use information, building placements, heights and geometries of the interior structure of buildings, along with site-specific models of components that are distributed spatially within a physical environment (Fig. 18). The present invention separately provides an asset management system that allows the integrated **three-dimensional model** of the outdoor, indoor, and distributed infrastructure equipment to communicate with and

aggregate the information pertaining to actual physical components of the actual network (183), thereby providing a management system that can track the on-going performance, cost, maintenance history, and depreciation of multiple networks (189) using the site-specific unified digital format.

French Abstract:

L'invention concerne un procede et un systeme pour creer, utiliser et gerer un modele numerique tridimensionnel de l'environnement physique. Ce procede combine des informations concernant l'elevation de terrains exterieurs et l'utilisation des sols, le placement des immeubles, les hauteurs et les formes des structures interieures des immeubles, avec des modeles de composantes propres a un site, lesquelles composantes sont reparties spatialement dans un environnement physique (Fig. 18). Cette invention concerne separement un systeme de gestion des ressources qui permet au modele tridimensionnel integre de l'equipement d'infrastructure exterieure, interieure, et repartie de communiquer avec et de s'ajouter aux informations concernant les composantes physiques reelles du reseau reel (183), permettant ainsi d'obtenir un systeme de gestion qui peut suivre la performance en cours, le cout, l'historique de la maintenance, et la deterioration de multiples reseaux (189), a l'aide du format numerique unifie propre a un site.

Legal Status Type	Pub. Date	Kind	Text
Publication	20020822	A1	With international search report.
Publication	20020822	A1	Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.
Examination	20021205		Request for preliminary examination prior to end of 19th month from priority date

Dialog eLink: Order File History
37/5/2 (Item 2 from file: 349)
DIALOG(R)File 349: PCT FULLTEXT

00916916

TEXTUAL AND GRAPHICAL DEMARCATION OF LOCATION, AND INTERPRETATION OF MEASUREMENTS
DEMARCATION GRAPHIQUE ET TEXTUELLE D'UNE LOCALISATION ET INTERPRETATION DES MESURES

Patent Applicant/Patent Assignee:

- **WIRELESS VALLEY COMMUNICATIONS INC**; Suite 700, 2404 Rutland Drive, Austin, TX 78758 US; US(Residence); US(Nationality)

Legal Representative:

- **WHITHAM Michael E(et al)(agent)**
  Whitham, Curtis & Christofferson PC, 11491 Sunset Hills Road, Suite 340, Restson, VA 20190; US;

	Country	Number	Kind	Date
Patent	WO	200251053	A2-A3	20020627
Application	WO	2001US47704		20011217
Priorities	US	2000255895		20001218

Designated States: (All protection types applied unless otherwise stated - for applications 2004+)

[EP] AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; TR;

[OA] BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG;

[AP] GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZM; ZW;

[EA] AM; AZ; BY; KG; KZ; MD; RU; TJ; TM;

Main International Patent Classes (Version 7):

IPC	Level
G06F-003/00	Main

Language Publication Language: English
Filing Language: English
Fulltext word count: 17634

English Abstract:

A computerized method and system allows for collecting data (806) for spatially distributed group of objects or networks (802), select one or more textual strings and/or graphical icons to associate with measurement readings (804) by either skilled or unskilled personnel and for interpreting; analyzing, the collected data in an **environmental database**.

French Abstract:

L'invention concerne un systeme informatise. Ce systeme permet a un personnel qualifie ou non qualifie de collecter des donnees dans un groupe d'objets ou de reseaux a repartition spatiale. Ce systeme permet egalement d'analyser ces donnees collectees dans une base de donnees d'environnement.

Legal Status Type	Pub. Date	Kind	Text
Publication	20020627	A2	Without international search report and to be republished upon receipt of that report.
Search Rpt	20021205		Late publication of international search report
Republication	20021205	A3	With international search report.
Examination	20030206		Request for preliminary examination prior to end of 19th month from priority date

Dialog eLink: Order File History
37/5/3 (Item 3 from file: 349)

00876798

SYSTEM, METHOD, AND APPARATUS FOR PORTABLE DESIGN, DEPLOYMENT, TEST, AND OPTIMIZATON OF A COMMUNICATION NETWORK
SYSTEME, PROCEDE ET APPAREIL PORTABLE POUR CONCEPTION, DEVELOPPEMENT, TEST ET OPTIMISATION D'UN RESEAU DE COMMUNICATION

Patent Applicant/Patent Assignee:

- **WIRELESS VALLEY COMMUNICATIONS INC**; 104 Hubbard Street, Blacksburg, VA 24062 US; US(Residence); US(Nationality)

Legal Representative:

- **WHITHAM Michael E(agent)**
  McguireWoods, LLP, Suite 1800, 1750 Tysons Boulevard, Mclean, VA 22102-4215; US;

	Country	Number	Kind	Date
Patent	WO	200210942	A1	20020207
Application	WO	2001US23602		20010727
Priorities	US	2000628506		20000728

Designated States: (All protection types applied unless otherwise stated - for applications 2004+)

[EP] AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; TR;

[OA] BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG;

[AP] GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZW;

[EA] AM; AZ; BY; KG; KZ; MD; RU; TJ; TM;

Main International Patent Classes (Version 7):

IPC	Level
G06F-015/16	Main
G06F-015/173	
G06F-013/10	
G06F-013/12	

IPC	Level
G06F-009/45	

Language Publication Language: English
Filing Language: English
Fulltext word count: 12807

English Abstract:

A system and method which employs one or more portable hand held computers (102) with one or more servers (100), to provide field engineers the ability to complete the entire design, deployment, test, optimization, and maintenance cycle required to implement successful communication networks.

French Abstract:

L'invention porte sur un systeme et un procede utilisant un ou plusieurs ordinateurs portables (102) dotes d'un ou plusieurs serveurs (100) afin que les inspecteurs de maintenance puissent achever toute la conception, le developement, les essais, l'optimisation et le cycle de maintenance necessaires a une bonne installation de reseaux de communciation.

Legal Status Type	Pub. Date	Kind	Text
Publication	20020207	A1	With international search report.
Examination	20021010		Request for preliminary examination prior to end of 19th month from priority date

Dialog eLink: Order File History
37/5/4 (Item 4 from file: 349)
DIALOG(R)File 349: PCT FULLTEXT

00760470

METHOD AND SYSTEM FOR A BUILDING DATABASE MANIPULATOR
PROCEDE ET SYSTEME POUR MANIPULATEUR DE BASES DE DONNEES DE CONSTRUCTION

Patent Applicant/Patent Assignee:

- **WIRELESS VALLEY COMMUNICATIONS INC**; 104 Hubbard Street, Blacksburg, VA 24060 US; US(Residence); US(Nationality)

Legal Representative:

- **WHITHAM Michael E**
  Whitham, Curtis & Whitham, 11800 Sunrise Valley Drive, Suite 900, Reston, VA 20191; US;

	Country	Number	Kind	Date
Patent	WO	200073874	A2	20001207
Application	WO	2000US12910		20000511
Priorities	US	99318841		19990526

Designated States: (All protection types applied unless otherwise stated - for applications 2004+)

[EP] AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE;

[OA] BF; BJ; CF; CG; CI; CM; GA; GN; GW; ML; MR; NE; SN; TD; TG;

[AP] GH; GM; KE; LS; MW; SD; SL; SZ; TZ; UG; ZW;

[EA] AM; AZ; BY; KG; KZ; MD; RU; TJ; TM;

Main International Patent Classes (Version 7):

IPC	Level
G06F	Main

Language Publication Language: English
Filing Language: English
Fulltext word count: 5000

English Abstract:

A **Building** Database Manipulator to build **databases** for a variety of physical **environments** including **definitions** of **buildings**, terrain and other site **parameters**, by scanning in or rapidly editing data. Raster scans may be entered or object files in various formats may be used as input. Detailed information is stored in the drawing database about the object's location, radio frequency attenuation, color, and other physical information such as electrical characteristics and intersections of the object with the ground, floors, ceilings, and other objects when objects are formatted in a drawing. The formatting process is strictly two-dimensional in nature, but the resulting drawing is a true three-dimensional environment. The user sees the **three-dimensional building structure** by altering the views. The resulting **database** may be used in a variety of modeling applications, but is especially useful for engineering, planning and management tools for in-building or microcell **wireless systems**.

French Abstract:

L'invention concerne un manipulateur de bases de donnees de construction, concu pour la construction de bases de donnees pour un grand nombre d'environnements physiques, comprenant des **definitions** de batiments, des parametres relatifs aux terrains et a d'autres sites, par exploration de donnees ou par la mise en forme rapide de donnees. Des balayages trames peuvent etre entres ou des fichiers objets dans divers formats peuvent etre utilises comme entree. Des informations detaillees sont memorisees dans la base de donnees de dessins, relative a l'emplacement des objets, l'attenuation des radiofrequences, la couleur et d'autres informations physiques, telles que les caracteristiques electriques et les intersections de l'objet avec la terre, les sols, les plafonds et d'autres objets, lorsque les objets sont presentes dans un dessin. Le processus de presentation est strictement bidimensionnel par nature, mais le dessin resultant represente un veritable environnement tridimensionnel. L'utilisateur voit la structure de construction tridimensionnelle en modifiant les vues. La base de donnees resultante peut etre utilisee dans une grande variete d'applications de modelisation, mais est particulierement utile pour des outils d'ingenierie, de planification et de gestion pour systemes sans fil integres aux batiments ou microcellulaires.

Legal Status Type	Pub. Date	Kind	Text
Publication	20001207	A2	Without international search report and to be republished upon receipt of that report.
Search Rpt	20010222		Late publication of international search report
Examination	20010426		Request for preliminary examination prior to end of 19th month from priority date

28/5/6 (Item 5 from file: 2)
DIALOG(R)File 2: INSPEC

06398594
Title: Analysis of CDMA cellular radio systems employing adaptive antennas in multipath environments
Author(s): Liberti, J.C.; Rappaport, T.S.
Author Affiliation: Wireless Syst. Res. Dept., Bellcore, Red Bank, NJ, USA
Book Title: 1996 IEEE 46th Vehicular Technology Conference. Mobile Technology for the Human Race (Cat. No.96CH35894)
Inclusive Page Numbers: 1076-80 vol.2
Publisher: IEEE, New York, NY
Country of Publication: USA
Publication Date: 1996
Conference Title: Proceedings of Vehicular Technology Conference - VTC
Conference Date: 28 April-1 May 1996
Conference Location: Atlanta, GA, USA
ISBN: 0 7803 3157 5
U.S. Copyright Clearance Center Code: 0 7803 3157 5/96/$5.00
Item Identifier (DOI): 10.1109/VETEC.1996.501477
Part: vol.2
Number of Pages: 3 vol. xxxix+1887
Language: English
Document Type: Conference Paper (PA)
Treatment: Theoretical or Mathematical (T)
Abstract: This paper presents an analysis of code division multiple access (CDMA) **cellular radio systems** employing adaptive antennas in multipath environments. The results of simulations are described which illustrate the capacity improvements that can be achieved on the reverse link of a biphase asynchronous CDMA system using adaptive antenna arrays and switched beam systems at the base station. The effects of varying channel **parameters** are investigated for both correlated and uncorrelated multipath environments and the impact of imperfect power control is considered. Results are presented using both a geometrically based channel model and channels generated using ray tracing with a **three dimensional building data base**. These results indicate that the multipath **structure** significantly impacts the performance improvements that can be achieved by spatial filter systems (*12 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: adaptive antenna arrays; cellular radio; code division multiple access ; correlation methods; land mobile radio; multipath channels; power control ; pseudonoise codes; ray tracing; spatial filters; spread spectrum communication; time-varying channels
Identifiers: DS-CDMA **cellular radio systems**; adaptive antennas ; code division multiple access; capacity improvements; reverse link; biphase asynchronous CDMA system; adaptive antenna arrays; switched beam systems; base station; channel **parameters**; correlated multipath environments; uncorrelated multipath environments; imperfect power control; geometrically based channel **model**; ray tracing; **three dimensional building data base**; performance improvements; spatial filter systems
Classification Codes: B6250F (Mobile radio systems); B5270D (Antenna arrays); B6150E (Multiple access communication)
INSPEC Update Issue: 1996-041
Copyright: 1996, IEE

Dialog eLink: USPTO Full Text Retrieval Options
29/5/1 (Item 1 from file: 99)
DIALOG(R)File 99: Wilson Appl. Sci & Tech Abs

2156226 **H.W. Wilson Record Number:** BAST00034307
Isolating interference

Rappaport, Ted S ;
Wireless Review v. 17 no9 (May 1 2000) p. 32-5
Document Type: Feature Article **ISSN:** 1099-9248 **Language:** English **Record Status:** Corrected or revised record

Abstract: Techniques for combatting interference in wireless networks are discussed. The ability to understand and predict interference is a crucial aspect of controlling it. Wireless-service providers can now archive and simultaneously track the interference effects of every base station in their networks in high-capacity urban cores. Therefore, it is possible to understand, predict, and design around the RF environment that a cell-system design creates by **modeling** the it with a **3- D** representation of the physical world.

Descriptors: Wireless telecommunications networks; Interference suppression; Radio frequency allocation ;

Dialog eLink: USPTO Full Text Retrieval Options
29/5/2 (Item 2 from file: 99)
DIALOG(R)File 99: Wilson Appl. Sci & Tech Abs

2066906 **H.W. Wilson Record Number:** BAST00022718
Getting in

Morrow, Robert K Jr ; **Rappaport, Theodore S**
Wireless Review v. 17 no5 (Mar. 1 2000) p. 42-4
Document Type: Feature Article **ISSN:** 1099-9248 **Language:** English **Record Status:** Corrected or revised record

Abstract: The subject of RF penetration into buildings from outside sources has become one of today's burning issues. The existence of "dead zones" is a concern that is addressed by new wireless engineering software, which can model the RF environment in a systematic fashion, plotting either signal strength or interference levels. These new **programs** use **3- D CAD** renditions of buildings and assign appropriate RF attenuation values to walls, windows, and other partitions. This done, any RF sources can be placed within or without the building, and the received-signal-strength identification or C/I ratios can be directly plotted onto the **CAD** drawing.

Descriptors: Wireless telecommunications networks; Radio frequency ;

Dialog eLink: USPTO Full Text Retrieval Options
29/5/3 (Item 1 from file: 2)
DIALOG(R)File 2: INSPEC

09258788
Title: Globally optimal transmitter placement for indoor wireless communication systems
Author(s): Jian He; Verstak, A.A.; Watson, L.T.; Stinson, C.A.; Ramakrishnan, N.; Shaffer, C.A.; **Rappaport, T.S.**; Anderson, C.R.; Bae, K.K.; Jing Jiang; Tranter, W.H.

Author Affiliation: Dept. of Comput. Sci., Virginia Polytech. Inst., Blacksburg, VA, USA
Journal: IEEE Transactions on Wireless Communications , vol.3 , no.6 , pp.1906-11
Publisher: IEEE
Country of Publication: USA
Publication Date: Nov. 2004
ISSN: 1536-1276
SICI: 1536-1276(200411)3:6L.1906:GOTP;1-K
CODEN: ITWCAX
U.S. Copyright Clearance Center Code: 1536-1276/04/$20.00
Item Identifier (DOI): 10.1109/TWC.2004.837454
Language: English
Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: A global optimization technique is applied to solve the optimal transmitter placement problem for indoor wireless systems. An efficient pattern search algorithm - DIviding RECTangles (DIRECT) of Jones et al.- has been connected to a parallel **three-dimensional** radio propagation ray tracing **modeler** running on a 200-node Beowulf cluster of Linux workstations. Surrogate functions for a parallel wideband code-division multiple-access (WCDMA) simulator were used to estimate the system performance for the global optimization algorithm. Power coverage and bit-error rate are considered as two different criteria for optimizing locations of a specified number of transmitters across the feasible region of the design space. This paper briefly describes the underlying radio propagation and WCDMA simulations and focuses on the design issues of the optimization loop (*12 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: broadband networks; code division multiple access; error statistics; indoor radio; optimisation; radio transmitters; radiowave propagation; ray tracing
Identifiers: globally optimal transmitter placement; indoor wireless communication system; global optimization technique; pattern search algorithm; parallel **three-dimensional** radio propagation ray tracing **modeler** ; Beowulf cluster; Linux workstation; surrogate function; parallel wideband code-division multiple-access; bit-error rate; WCDMA; optimization loop
Classification Codes: B6250 (Radio links and equipment); B6150E (Multiple access communication); B5210C (Radiowave propagation); B0260 (Optimisation techniques); B0240Z (Other topics in statistics)
INSPEC Update Issue: 2005-004

29/5/4 (Item 2 from file: 2)
DIALOG(R)File 2: INSPEC

06766294
Title: An advanced 3D ray launching method for wireless propagation prediction
Author(s): Durgin, G.; Patwari, N.; **Rappaport, T.S.**
Author Affiliation: Bradley Dept. of Electr. Eng., Virginia Polytech. Inst. & State Univ., Blacksburg, VA, USA
Book Title: 1997 IEEE 47th Vehicular Technology Conference. Technology in Motion (Cat. No.97CH36003)
Inclusive Page Numbers: 785-9 vol.2
Publisher: IEEE, New York, NY
Country of Publication: USA
Publication Date: 1997
Conference Title: 1997 IEEE 47th Vehicular Technology Conference. Technology in Motion
Conference Date: 4-7 May 1997
Conference Location: Phoenix, AZ, USA
ISBN: 0 7803 3659 3
U.S. Copyright Clearance Center Code: 0 7803 3659 3/97/$10.00
Item Identifier (DOI): 10.1109/VETEC.1997.600436
Part: vol.2
Number of Pages: 3 vol. xxx+2247
Language: English

Document Type: Conference Paper (PA)
Treatment: Theoretical or Mathematical (T)
Abstract: For radio propagation prediction, recent simulations involving ray tracing offer unprecedented accuracy. These techniques surpass statistical channel models and provide a bounty of additional information including RMS delay spread, angle of arrival, and overall wideband channel impulse response. In particular, three dimensional ray tracing produces an accurate, deterministic channel model for wireless system design. This paper presents a new 3D ray tracing technique of unprecedented speed and accuracy. Simulation results are compared to microcell measurements at 1900 MHz (*16 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: cellular radio; land mobile radio; ray tracing; UHF radio propagation
Identifiers: 3D ray launching method; wireless propagation prediction; radio propagation prediction; simulation results; RMS delay spread; angle of arrival; overall wideband channel impulse response; **three dimensional** ray tracing; deterministic channel **model**; wireless system design; microcell measurements; distributed wavefronts; geodesic spheres; 1900 MHz
Classification Codes: B5210C (Radiowave propagation); B6250F (Mobile radio systems)
Numerical Indexing: frequency: 1.9E+09 Hz
INSPEC Update Issue: 1997-047

29/5/5 (Item 3 from file: 2)
DIALOG(R)File 2: INSPEC

06398594
Title: Analysis of CDMA cellular radio systems employing adaptive antennas in multipath environments
Author(s): Liberti, J.C.; **Rappaport, T.S.**
Author Affiliation: Wireless Syst. Res. Dept., Bellcore, Red Bank, NJ, USA
Book Title: 1996 IEEE 46th Vehicular Technology Conference. Mobile Technology for the Human Race (Cat. No.96CH35894)
Inclusive Page Numbers: 1076-80 vol.2
Publisher: IEEE, New York, NY
Country of Publication: USA
Publication Date: 1996
Conference Title: Proceedings of Vehicular Technology Conference - VTC
Conference Date: 28 April-1 May 1996
Conference Location: Atlanta, GA, USA
ISBN: 0 7803 3157 5
U.S. Copyright Clearance Center Code: 0 7803 3157 5/96/$5.00
Item Identifier (DOI): 10.1109/VETEC.1996.501477
Part: vol.2
Number of Pages: 3 vol. xxxix+1887
Language: English
Document Type: Conference Paper (PA)
Treatment: Theoretical or Mathematical (T)
Abstract: This paper presents an analysis of code division multiple access (CDMA) cellular radio systems employing adaptive antennas in multipath environments. The results of simulations are described which illustrate the capacity improvements that can be achieved on the reverse link of a biphase asynchronous CDMA system using adaptive antenna arrays and switched beam systems at the base station. The effects of varying channel parameters are investigated for both correlated and uncorrelated multipath environments and the impact of imperfect power control is considered. Results are presented using both a geometrically based channel model and channels generated using ray tracing with a three dimensional building data base. These results indicate that the multipath structure significantly impacts the performance improvements that can be achieved by spatial filter systems (*12 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: adaptive antenna arrays; cellular radio; code division multiple access ; correlation methods; land mobile radio; multipath channels; power control ; pseudonoise codes; ray tracing; spatial filters; spread spectrum communication; time-

varying channels
Identifiers: DS-CDMA cellular radio systems; adaptive antennas; code division multiple access; capacity improvements; reverse link; biphase asynchronous CDMA system; adaptive antenna arrays; switched beam systems; base station; channel parameters; correlated multipath environments; uncorrelated multipath environments; imperfect power control; geometrically based channel **model**; ray tracing; **three dimensional** building data base; performance improvements; spatial filter systems
Classification Codes: B6250F (Mobile radio systems); B5270D (Antenna arrays); B6150E (Multiple access communication)
INSPEC Update Issue: 1996-041

29/5/6 (Item 4 from file: 2)
DIALOG(R)File 2: INSPEC

06270335
Title: Optimal location of transmitters for micro-cellular radio communication system design
Author(s): Sherali, H.D.; Pendyala, C.M.; **Rappaport, T.S.**
Author Affiliation: Dept. of Ind. & Syst. Eng., Virginia Polytech. Inst. & State Univ., Blacksburg, VA, USA
Journal: IEEE Journal on Selected Areas in Communications , vol.14 , no.4 , pp.662-73
Publisher: IEEE
Country of Publication: USA
Publication Date: May 1996
ISSN: 0733-8716
SICI: 0733-8716(199605)14:4L.662:OLTM;1-A
CODEN: ISACEM
Document Number: S0733-8716(96)01942-7
U.S. Copyright Clearance Center Code: 0733-8716/96/$05.00
Item Identifier (DOI): 10.1109/49.490417
Language: English
Document Type: Journal Paper (JP)
Treatment: Theoretical or Mathematical (T)
Abstract: This paper is concerned with the mathematical modeling and analysis of a radio communication system design problem that seeks an optimal location of a single transmitter, or that of multiple transmitters, in order to serve a specified distribution of receivers. The problem is modeled by discretizing the radio coverage region into a grid of receiver locations and by specifying a function that estimates the path-loss or signal attenuation for each receiver location, given a particular location for a transmitter that communicates with it. The resulting model is a nonlinear programming problem having an implicitly defined objective function of minimizing a measure of weighted path-losses. Specializations of three nonlinear optimization algorithms, namely, the Hooke and Jeeves' method, the quasi-Newton, and conjugate gradient search procedures are investigated for solving this problem. The technique described here is intended to interact with various propagation prediction models and may be used in a **CAD** system for radio communication system design (*13 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: cellular radio; conjugate gradient methods; indoor radio; minimisation ; nonlinear programming; parameter estimation; radio transmitters; search problems
Identifiers: transmitters; micro-cellular radio communication system design; optimal location; receivers; radio coverage region; path-loss; signal attenuation; nonlinear programming problem; objective function; weighted path-losses; Hooke and Jeeves method; quasi-Newton method; conjugate gradient search procedures; propagation prediction models; **CAD** system
Classification Codes: B6250F (Mobile radio systems); B0260 (Optimisation techniques); B0290F (Interpolation and function approximation (numerical analysis)); B0290H (Linear algebra (numerical analysis)); B0250 (Combinatorial mathematics); B6150P (Communication network design, planning and routing)
INSPEC Update Issue: 1996-020

Dialog eLink: USPTO Full Text Retrieval Options
29/5/7 (Item 5 from file: 2)
DIALOG(R)File 2: INSPEC

05871864
Title: Propagation measurements and models for wireless communications channels
Author(s): Andersen, J.B.; **Rappaport, T.S.**; Yoshida, S.
Author Affiliation: Center for Personkomnunikation, Aalborg Univ., Denmark
Journal: IEEE Communications Magazine , vol.33 , no.1 , pp.42-9
Country of Publication: USA
Publication Date: Jan. 1995
ISSN: 0163-6804
CODEN: ICOMD9
U.S. Copyright Clearance Center Code: 0163-6804/95/$04.00
Item Identifier (DOI): 10.1109/35.339880
Language: English
Document Type: Journal Paper (JP)
Treatment: Theoretical or Mathematical (T); Experimental (X)
Abstract: The authors describe the type of signals that occur in various environments and the modeling of the propagation parameters. Models are essentially of two classes. The first class consists of parametric statistical models that on average describe the phenomenon within a given error. They are simple to use, but relatively coarse. In the last few years a second class of environment-specific models has been introduced. These models are of a more deterministic nature, characterizing a specific street, building, etc. They are necessarily more time consuming to use, but are also more revealing concerning physical details and hopefully more accurate. Some key parameters and the measurement of them are discussed and then the different wireless environments are treated. The latter topic is divided into outdoor environments, indoor environments, and radio penetration from outdoor to indoor environments (*30 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: cellular radio; indoor radio; land mobile radio; personal communication networks; radiowave propagation; telecommunication channels
Identifiers: propagation measurements; parametric statistical models; wireless communications channels; environment-specific **models**; **3D** numerical **modeling**; time delay statistics; coverage; interference; data rates; angle-of-arrival statistics; adaptive antennas; PCS; propagation parameters; outdoor propagation; cellular radio; indoor propagation; RF penetration; **CAD**
Classification Codes: B6250F (Mobile radio systems); B5210C (Radiowave propagation)
INSPEC Update Issue: 1995-006
Copyright: 1995, IEE

29/5/8 (Item 6 from file: 2)
DIALOG(R)File 2: INSPEC

05471307
Title: Site specific propagation prediction models for PCS design and installation
Author(s): Tran, T.T.; **Rappaport, T.S.**
Author Affiliation: Bradley Dept. of Electr. Eng., Virginia Polytech. Inst. & State Univ., Blacksburg, VA, USA
Inclusive Page Numbers: 1062-5 vol.3
Publisher: IEEE, New York, NY
Country of Publication: USA
Publication Date: 1992
Conference Title: MILCOM '92 - `Communications - Fusing Command, Control and Intelligence' Conference Record (Cat. No. 92CH3131-0)

Conference Date: 11-14 Oct. 1992
Conference Location: San Diego, CA, USA
Conference Sponsor: IEEE Common. Soc. Armed Forces Common. & Electonr. Assoc
ISBN: 0 7803 0585 X
U.S. Copyright Clearance Center Code: 0 7803 0585 X/92/$3.00
Item Identifier (DOI): 10.1109/MILCOM.1992.244123
Number of Pages: 3 vol. (xxxvii+415+xxxviii+809+xxxviii+1240)
Language: English
Document Type: Conference Paper (PA)
Treatment: Theoretical or Mathematical (T)
Abstract: The authors present novel site-specific propagation prediction methods for emerging personal communication system (PCS) services which will offer high capacity in urban settings. The propagation prediction **models**, composed of **3-D** diffraction and ray tracing, are being implemented as software tools on SUN computer workstations. A geographical information system software package is being used to interface building and terrain data with the propagation prediction programs. Early work at Virginia Tech's Mobile and Portable Radio Research Group shows that the predicted signal strengths are within a few decibels of average measured signal strengths for some test cases (*11 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering)
Descriptors: electromagnetic wave diffraction; geographic information systems; personal communication networks; radiowave propagation; ray tracing; telecommunications computing
Identifiers: building data; site-specific propagation prediction methods; personal communication **system**; urban settings; **3-D** diffraction; ray tracing; SUN **computer** workstations; geographical information system software package; terrain data; signal strengths
Classification Codes: B6250F (Mobile radio systems); B5210C (Radiowave propagation); C7410F (Communications computing); C7840 (Geography and cartography computing)
INSPEC Update Issue: 1993-033

44/3,K/1 (Item 1 from file: 15)
DIALOG(R)File 15: ABI/Inform(R)

02026663 53778101
Isolating interference

Rappaport, Ted S
Wireless Review v17n9 pp: 32-35
May 1, 2000
ISSN: 1099-9248 **Journal Code:** WLR
Word Count: 1445
Rappaport, Ted S

Abstract:
As **wireless systems** proliferate worldwide, the arch-enemy of **wireless-system** designers - uncontrollable interference - hampers capacity and limits the cost-effectiveness of new sites and system hardware. Considering the fact that in five to seven years...

...protocols over wireless, the RF emissions of co-channel and adjacent channel users will continue to define the limits of quality and capacity in any **wireless system.**

Text:
Find the key to (system design) happiness.

As **wireless systems** proliferate worldwide, the arch-enemy of **wireless-system** designers - uncontrollable interference

hampers capacity and limits the cost-effectiveness of new sites and system hardware. When you consider the fact that in five to...
...protocols over wireless, the RF emissions of co-channel and adjacent-channel users will continue to define the limits of quality and capacity in any **wireless systems**. (See Figure 1 on page 34.)

Numerous technological advances have taken aim at taming interference in practical **cellular-system** deployment. One major step was the development of CDMA technology, which actually induces interference among co-channel users between base stations and in neighboring cells...

...guarantee that only a specific user occupies a particular RF channel at any instant of time, thereby restricting the number of simultaneous users in a **cellular system**. When used with standard co-channel cellsystem planning, it's possible for TDMA systems to provide a wellcontrolled interference environment, although the interference from users...

...in a rapid build-out mode is the ability to archive and simultaneously track the interference effects of every base station in their networks. By **modeling** the **RF environment** with a **3-dimensional** representation of the physical world, it becomes possible to understand, predict and design around the **RF environment** that your own cell-system design creates. This use of knowledge is a crucial aspect in controlling interference.
Real-Life RF Interference

An example can...

...a 1-by-1-mile urban core is modeled with six low-power IS-136 microcells and three taller macrocells in the U.S. 800MHz **cellular** band. The **system** has evolved over time, where each microcell is placed to serve users in a high-density urban environment. If each microcell has 57 RF voice...

...or New York, additional capacity may be needed. (See Figures 1 and 2.)

For example, say that an office building wished to install its own **wireless**-office-**system** (WOS) solution for its employees. Here is the dilemma: Already there's significant channel reuse in the urban core. What will happen if additional base stations and antennas are added within a building? This is where **wireless-system**-design software can help. Not only can **computer-aided design** tools help provide "what if" analysis of the interaction of new systems within an urban core, but they can simultaneously track the whereabouts of new allows the RF engineer to simply measure, in situ, the **RF**-interference **environment**, and then to design the inbuilding or campus system quickly. The article "Getting In" (Wireless Review, March 1, 2000), shows some simple methods of modeling the entire **RF environment** so that a reliable in-building design can be made. With this "measure and plan" technique, an RF engineer can be certain that the proper channel selection and antenna placements can be made. Again, having a **computer-aided design tool** that integrates measurements with **3D** building data makes the job of interference control a snap.

Other methods for controlling interference include the use of adaptive

frequency planning, where a careful...

...specific channel listing could be defined at existing base stations. This concept of adaptive frequency planning allows service providers to readjust their existing co-channel **cellular-system** configurations to better optimize the RF channels at each transmitter. The value of such an approach allows a service provider to "reset" its market-wide...

...about interference: It's difficult to completely design against. But with judicious channel-assignment schemes and deployment strategies that use knowledge of the physical 3D **radio environment**, it's possible to maximize capacity and the use of RF assets. Fortunately, new technologies in multiple access, filter design and **computer-aided design** and archiving are coming online to help engineers carry out the great wireless build-out more efficiently and accurately.

Figure 3.

Figure 4. building as...

44/3,K/2 (Item 2 from file: 15)
DIALOG(R)File 15: ABI/Inform(R)

02004436 51988639
Getting in

Morrow, Robert K Jr; **Rappaport, Theodore S**
Wireless Review v17n5 pp: 42-44
Mar 1, 2000
ISSN: 1099-9248 **Journal Code:** WLR
Word Count: 932
...**Rappaport, Theodore S**

Abstract:
...engineering software, service providers can model co-channel interference's effects on indoor systems and find dead zones within a building that the outdoor macrocellular **system** serves. New programs use **3-D computer-aided design** renditions of buildings or collections of buildings. These renditions show partitions and are assigned appropriate RF attenuation values. Carriers can extract estimated partition loss values from extensive in-building measurements. Modeling macrocell interference to an established or contemplated indoor **wireless system** is relatively straightforward.

Text:
In-building coverage is a must. New software and **CAD** renditions can help you achieve RF penetration.

As cells become smaller and indoor wireless use increases, RF penetration

into buildings from outside sources has be...
...systems and find dead zones within the building that the outdoor macrocellular system serves. Even before setting foot into the building, you can assess the **RF environment** in a systematic, organized fashion by plotting either signal strength or interference levels.

New **programs** use 3-**D computer-aided design** (**CAD**) renditions of buildings or collections of buildings. These renditions show partitions and are assigned appropriate RF attenuation values. For example, outside walls may be assigned...

...within or outside the building, in a 3-D building database, and plot received-signal-strength identification (RSSI) or C/I ratios directly onto the **CAD** drawing. With the right software, you also can carry out traffic-capacity analysis, frequency planning and co-channel-interference analysis simultaneously within the propagation model...

...several miles north of the office building provide sufficient signal strength for indoor use in your customer's sixth-floor office? If you scale the **CAD** drawing to include the macrocell at its actual distance, the building itself will appear too small in the drawing to be useful. Although site-planning...

...propagation formula to calculate that cell's lower transmitted power as if it were located just outside the building's wall.
What About Interference?

With **wireless systems** springing up almost everywhere, interference, instead of simple signal strength, is the dominant performance-limiting factor in many locations. Modeling macrocell interference to an established or contemplated indoor **wireless system** also is relatively straightforward.

Suppose, for example, that an indoor base station is assigned a frequency set identical to an outdoor macrocell. Although the indoor node may provide sufficient RSSI throughout its coverage area, interference from the outside cell may render the indoor **wireless system** unavailable in certain parts of the building.

Be careful, however, when modeling and analyzing interference, because its detrimental effect also may depend on signal processing...

...other existing macrocells adequately supplement its coverage, or must you add indoor picocells? Where should you place these cells? If you are planning an indoor **wireless system** that competes with signals from an outside macrocell, how much interference can you expect, and where will it occur within the building? As in-building **wireless systems** proliferate, you must answer questions quickly and inexpensively in a systematic and repeatable manner. You can address these issues by modeling the situation with today...

Descriptors:
...Computer aided design; CAD;

Classification Codes:

44/3,K/3 (Item 1 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB

08611851 **Supplier Number:** 18181419 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Educating engineers for a wireless world.(Special Report: Communications Employment) (Industry Trend or Event)

Rappaport, Theodore S.; Scharnhorst, Aurelia A.
Electronic Engineering Times , n896 , pC8(1)
April 8 , 1996
ISSN: 0192-1541
Language: English
Record Type: Fulltext; Abstract
Word Count: 673 **Line Count:** 00060
Rappaport, Theodore S...

Abstract: ...communications and computing disciplines need to be merged, assuring that students are trained in a wide range of communications technology skills, including programming, fabrication and **radio-system** design. Equally important is that students graduate with a basic knowledge of C and C++ programming, as well as such **CAD** programs as AutoCAD and MathCAD, which are widely used in the industry. The booming growth of wireless technology demands a knowledge of circuit prototyping concepts...
Abstract:

Text:
...vice versa. But explosive growth in wireless communications will require that students possess a broad knowledge of computer-network issues as well as programming, fabrication, **radio-system** design and fundamental communications concepts.

...mastery of the C and C++ programming language, is a must for students entering their junior year.

In today's communications industry, the prevalence of **computer-aided design** and simulation tools such as MatLab, MathCAD and AutoCAD necessitates that students develop proficiency with such tools prior to graduation.

Typically, exposure to **CAD** tools is reserved for junior- and senior-level courses, though some exposure is provided in the freshman year at many universities. To produce communications engineers...

...must shift to meet the demand that industry places on it.

The undergraduate curriculum will evolve so that first- and second-year coursework will employ **CAD** and simulation tools for teaching design and for virtual experimentation. The last two years will cover communications-system design and development, and specialized topics such...
...in wireless communications over the next five to 10 years, and more and more reliance on the use of computers to simulate, fabricate and implement **wireless systems.**

In addition to computer skills, the exploding personal communications system (PCS) industry will demand skills in **radio** propagation, **radio-system** design, digital signal processing and implementation, and networking. It is staggering to think that just 15

years ago there were only a handful of wireless...

...across the globe. This is a true revolution, and the skills required of wireless engineers of the future must include a fundamental knowledge of both **cellular** and PCS **systems** and computer networking.
Students will also need exposure to methods for implementing real-time DSP.
The Internet will also play an increasingly important role as...

III. Text Search Results from Dialog

A. Patent Files, Abstract

```
File 350:Derwent WPIX 1963-2009/UD=200944
         (c) 2009 Thomson Reuters
File 347:JAPIO Dec 1976-2009/Mar(Updated 090708)
         (c) 2009 JPO & JAPIO


Set     Items   Description
S1      19598   CAD OR COMPUTER(1W)AIDED(1W)(DESIGN OR ENGINEERING) OR CAGD
S2      63232   (3D OR (3 OR THREE)()(D OR DIMENSION??)) (12N) (COMPUTER? OR
SOFTWARE OR PROGRAM? ? OR APP OR APPS OR AUTOMAT?? OR SYSTEM? ? OR APPLICATION? ?
OR INTERFACE? ? OR APPT? ? OR SOLUTION? ? OR PLATFORM? ? OR SUITE? ? OR PACKAGE? ?
OR MODEL? OR TOOL? ?)

S3     239945   (MESH OR WIRELESS OR MOBILE OR CELLULAR OR RADIO OR 3G OR BROADBAND
OR RF) (2W) (NETWORK? ? OR LAN OR LANS OR MAN OR MANS OR (METROPOLITAN OR
 LOCAL)()AREA()NETWORK? ? OR SYSTEM? ?) OR WLAN OR WLANS OR WIMAX OR WIMAXS

S4      32102   (ASSEMBL??? OR (PUT OR PUTS OR PUTTING OR SET OR SETTING)()(UP OR
IN OR TOGETHER) OR CONSTRUCT??? OR INSTALL? OR HOOK()UP OR HOOKUP OR HOOKUPS OR
PLAC??? OR PLACEMENT OR DEPLOY??? OR DEPLOYMENT OR LAUNCH??? OR ARRANGEMENT OR
ARRANG??? OR DISTRIBUT??? OR FORMATION? ? OR GROUPING OR IMPLEMENTATION OR
IMPLEMENT??? OR ORGANIZATION OR ORGANIZ??? OR POSITION??? OR STATIONING OR
DESIGN???) (10N) S3

S5      81463   (DATABASE OR DATABASES OR DATABANK OR DATABANKS OR DATATABLE OR
DATATABLES OR DATASET OR DATASETS OR DATAFILE OR DATAFILES OR (DATA OR INFORMATION
OR KNOWLEDGE)()(BASE OR BASES OR BANK OR BANKS OR SET OR SETS OR FILE OR FILES OR
TABLE OR TABLES OR NETWORK? ?) OR DB OR KNOWLEDGEBASE OR KNOWLEDGEBASES OR RDBMS OR
DBMS OR OODB) (10N) (3D OR (3 OR THREE)()(D OR DIMENSION??)()PHYSICAL OR BUILDING?
? OR STRUCTURE? ? OR FACILIT??? OR REAL()ESTATE OR APARTMENT? ? OR CONDOMINIUM? ?
OR CONDO? ? OR SKYSCRAPER? ? OR HIGH()RISE OR HIGHRISE? ? OR CONSTRUCTION OR TOWER?
? OR ACADEMIC()HALL? ? OR ENVIRONMENT?? OR AREA? ? OR SITE? ? OR INFRASTRUCTURE OR
BASE()STATION? ? OR ANTENNA OR MEASUREMENT? ? OR PATH? ? OR SIGNAL? ? OR
SPECIFICATION? ? OR DEFINITION? ? OR PARAMETER? ? OR CRITERIA? ? OR PROPERTIES)

S6    1803469   DEFINITION? ? OR PARAMETER? ? OR CRITERIA? ? OR PROPERT???
S7     383430   (SCAL??? OR RESIZ??? OR STRETCH??? OR PROPORTIONAL?? OR RESAMPL???
OR ENLARG??? OR REDUC??? OR SHRINK??? OR COMPRESS??? OR EXPAND??? OR INCREAS??? OR
DECREAS??? OR SMALLER OR LARGER OR SIZE) (5N) (IMAGE? ? OR MODEL? ? OR PICTURE? ?
OR PHOTO? ? OR PHOTOGRAPH? ? OR DRAWING? ? OR MAP? ?)

S8     100070   RASTER()IMAGE? ? OR OPENRASTER OR BITMAP? ? OR PIXMAP? ? OR GIF OR
JPG OR BMP OR JPEG OR (DIGITAL OR AUTOCAD) (2N) (IMAGE? ? OR MODEL? ? OR PICTURE? ?
OR PHOTO? ? OR PHOTOGRAPH? ? OR DRAWING? ?) OR (INTERNET OR ONLINE OR ON()LINE OR
WEB OR ELECTRONIC OR CYBER) (5N) MAP? ?

S9         61   AU=(RAPPAPORT, T? OR RAPPAPORT T? OR RAPPAPORT (1N) (T OR THEODORE)
OR SKIDMORE, R? OR SKIDMORE R? OR SKIDMORE (1N) (R OR ROGER))

S10     79181   S1 OR S2
S11       871   S10 AND S3
S12       161   S11 NOT AY>1999
```

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S13          44   S12 AND S4
S14           6   S13 AND S5
S15           5   S13 AND S6
S16           4   S15 NOT S14
S17           3   S13 AND (S7 OR S8)
S18           1   S17 NOT (S14 OR S16)
S19          76   S11 AND S5
S20          28   S19 AND S6
S21           2   S20 AND (S7 OR S8)
S22           2   S21 NOT (S14 OR S16 OR S18)
S23         231   S10 (5N) S3
S24          78   S23 AND S4
S25          20   S24 NOT AY>1999
S26          16   S25 NOT (S14 OR S16 OR S18 OR S22)
S27        3649   S1 AND S2
S28          24   S27 AND S3
S29          24   S28 NOT  (S14 OR S16 OR S18 OR S22 OR S26)
S30           3   S29 NOT AY>1999
S31          37   S9 AND S3
S32          19   S31 AND S10
S33          14   S32 AND S4
S34          13   S33 AND S5
S35          12   S34 AND S6
S36           1   S35 AND (S7 OR S8)
S37           0   S36 NOT (S14 OR S16 OR S18 OR S22 OR S26)
S38          11   S35 NOT S36
S39          10   S38 NOT (S14 OR S16 OR S18 OR S22 OR S26)
```

Dialog eLink: Order File History

14/5/2 (Item 2 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0010545933 *Drawing available*
WPI Acc no: 2001-149149/200116
XRPX Acc No: N2001-109457

Assign channel distributing system for radio system in wireless local loop system includes sending information indicating whether each base station should serve as master station or slave station

Patent Assignee: NEC CORP (NIDE)
Inventor: SONETAKA N

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
AU 770691	B2	20040226	AU 1999963062	A	19991203	200459	E
DE 69927465	T2	20060104	DE 69927465	A	19991207	200601	B
AU 199963062	A	20000608	AU 1999963062	A	19991203	200116	E
DE 69917465	T2	20040623	DE 69917465	A	19991207	200443	E
JP 3067747	B2	20000724	JP 1998347303	A	19981207	200116	E
US 6487392	B1	20021126	US 1999456074	A	19991206	200281	E

Patent Family (9 patents, 28 countries)

Priority Applications (no., kind, date): JP 1998347303 A 19981207; EP 1999124396 A 19991207

Patent Details						
Patent Number	**Kind**	**Lan**	**Pgs**	**Draw**	**Filing Notes**	
EP 1009182	A2	EN	16	9		
Regional Designated States,Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2000175242	A	JA	11			
JP 3067747	B2	JA	7		Previously issued patent	JP 2000175242
AU 770691	B2	EN			Previously issued patent	AU 9963062
EP 1009182	B1	EN				
Regional Designated States,Original	DE FR SE					
DE 69927465	E	DE			Application	EP 1999124396
					Based on OPI patent	EP 1009182
DE 69927465	T2	DE			Application	EP 1999124396
					Based on OPI patent	EP 1009182

Alerting Abstract EP A2

NOVELTY - On the basis of information indicating a master/slave assignment which is sent from a base station control-station to the respective base station. The information on the channel interference level, the desired channel number is exchanged between master station and each slave station, where the master station performs the radio channel assignment on the slave stations on the basis of the information on the channel interference level and the desired channel number.

USE - Assigning radio channels optimally to a **radio system** in a wireless local loop which uses a **radio system** comprising cellular telephones and contains general subscribers (telephones).

ADVANTAGE - Provides optimum radio channel assignment to a **radio system**.

DESCRIPTION OF DRAWINGS - Drawing shows a block diagram showing an assign channel distributing system.

Title Terms /Index Terms/Additional Words: ASSIGN; CHANNEL; DISTRIBUTE; SYSTEM; RADIO; WIRELESS; LOCAL; LOOP; SEND; INFORMATION; INDICATE; BASE; STATION; SERVE; MASTER; SLAVE

Class Codes

H04W-0016/00	International	Patent	Classification		20090101	
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**	
H04Q-007/36			Main		"Version 7"	
H04W-0016/10	A	I		R	20090101	

ECLA: H04Q-007/36D, H04W-016/10
ICO: T04Q-007:30N
US Classification, Issued: 455554, 45511.1
File Segment: EPI;
DWPI Class: W01; W02
Manual Codes (EPI/S-X): W01-B05A; W01-B05A1A; W02-C03C1A; W02-C05A

16/5/3 (Item 3 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0009298447 *Drawing available*
WPI Acc no: 1999-228758/199919
Related WPI Acc No: 2001-456673; 2002-506845; 2003-199200
XRPX Acc No: N1999-169251
Computer aided 3D mesh model generating system
Patent Assignee: REAL-TIME GEOMETRY CORP (REAL-N)
Inventor: LEBEDEV A; MIGDAL A

Patent Family (1 patents, 1 countries)							
Patent Number	**Kind**	**Date**	**Application Number**	**Kind**	**Date**	**Update**	**Type**
US 5886702	A	19990323	US 1996730979	A	19961016	199919	B

Priority Applications (no., kind, date): US 1996730979 A 19961016

Patent Details					
Patent Number	**Kind**	**Lan**	**Pgs**	**Draw**	**Filing Notes**
US 5886702	A	EN	48	16	

Alerting Abstract US A
NOVELTY - The distance between unmeshed data points having closest face altered either by data point insertion or rearrangement, is redetermined and is compared with predetermined distance to identify next point for insertion.
DESCRIPTION - A set of data points are selected for mesh creation based on distance between each data point and preselected reference object. A mesh is constructed and the points are organized into a set of connection faces based on selected data points, by a mesh construction element. A data point detail ordering element, determines the remaining unmeshed data points which lie farthest from the mesh. A point insertion element creates reference on insertion list to data point in a sequence as the last point inserted. An optimality checking element determines whether the construction of newly created faces meets predetermined optimality **criteria**. A rearrangement element redefines the boundaries of newly

created faces in sequential order, when one of them does not meet predetermined optimality **criteria**.
INDEPENDENT CLAIMS are included for the following:

A. **3D** mesh **model** generating **method** using **computer**;
B. data point insertion **method** in **3D** mesh **model**;
C. resolution control method **of** mesh **model**

USE - For **3D modeling** of real-world objects, terrains, etc by **computer system**.
ADVANTAGE - The system enables communication system such as internet to display and manipulate images and models of real- world objects more rapidly.
DESCRIPTION OF DRAWINGS - The figure shows overview of basic programmed elements and data structures used to implement exemplary meshing system.

Title Terms /Index Terms/Additional Words: COMPUTER; AID; MESH; MODEL; GENERATE; SYSTEM

Class Codes

International Patent Classification					
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**
G06T-0017/20	A	I		R	20060101
G06T-0017/20	C	I		R	20060101

ECLA: G06T-017/20
US Classification, Issued: 345423
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J10C4; T01-J10C5; T01-J15X

16/5/4 (Item 4 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0003330165
WPI Acc no: 1985-093760/198516
Duplex operated mobile transmission equipment - uses equipment on mobile unit and at concentrators to determine most favourable operating zone
Patent Assignee: SIEMENS AG (SIEI)
Inventor: HADERER A; KAMMERLAND K; KAMMERLANDER K; NEYEN H J V D

Patent Family (7 patents, 4 countries)							
Patent Number	**Kind**	**Date**	**Application Number**	**Kind**	**Date**	**Update**	**Type**
DE 3335128	A	19850411	DE 3335128	A	19830928	198516	B
EP 141994	A	19850522	EP 1984111664	A	19840928	198521	E
JP 60094548	A	19850527	JP 1984202123	A	19840928	198527	E
US 4667202	A	19870519	US 1984653704	A	19840924	198722	E
EP 141994	B	19880511	EP 1984111664	A	19840928	198819	E
DE 3471225	G	19880616	DE 3335128	A	19830928	198825	E
EP 141994	B2	19910814				199133	E

Priority Applications (no., kind, date): DE 3335128 A 19830928

Patent Details					
Patent Number	**Kind**	**Lan**	**Pgs**	**Draw**	**Filing Notes**
DE 3335128	A	DE	23	9	
EP 141994	A	DE			
Regional Designated States,Original	DE FR GB SE				
EP 141994	B	DE			
Regional Designated States,Original	DE FR GB SE				
EP 141994	B2	EN			
Regional Designated States,Original	DE FR GB SE				

Alerting Abstract DE A

The network is divided up into zones each containing a concentrator and forming a **cellular system**, and a set of frequency channels is allocated to a selected group of zones. Digital signals are transmitted between a central station and the mobile units. To determine the limits between two zones, a relative distance measurement is made between a mobile unit and two or more concentrators, and the phase difference between the two signals is monitored.

The monitoring is carried out by operating the equipment on the mobile unit using the control channels and using the speech channels of the receiving equipment of the concentrators. The transit time is measured using time slots in the control channels.

USE - System enables mobile unit to be transferred to most favourable zone.

Title Terms /Index Terms/Additional Words: DUPLEX; OPERATE; MOBILE; TRANSMISSION; EQUIPMENT; UNIT; CONCENTRATE; DETERMINE; FAVOUR; ZONE; CELLULAR; RADIO

Class Codes

IPC	Class Level	Scope	Position	Status	Version Date
H04B-0007/26	A	I		R	20060101
H04W-0064/00	A	I		R	20090101
H04B-0007/26	C	I		R	20060101

H04W-0064/00	C		I		R	20090101	

ECLA: H04B-007/26F, H04Q-007/38L, H04W-064/00
US Classification, Current Main: 342-457000; Secondary: 455-067160, 455-443000
US Classification, Issued: 342457, 45533.4, 45554.2, 45567.6
File Segment: EPI;
DWPI Class: W02; W06
Manual Codes (EPI/S-X): W02-C03A; W02-C03X; W02-D; W06-A03

Dialog eLink: Order File History
22/5/1 (Item 1 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0015280512 *Drawing available*
WPI Acc no: 2005-630642/200564
Related WPI Acc No: 2005-617077
XRPX Acc No: N2005-517878
Operating method of mobile terminal, involves extracting several quantized signal levels from cell data received from transmission site within one particular cell, for other two adjacent cells, for performing handover operation
Patent Assignee: NOKIA CORP (OYNO); NOKIA INC (OYNO)
Inventor: HAMARA A; KALLIO J; RINDELL K; VAERE J; VARE J

Patent Family (2 patents, 107 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2005083918	A1	20050909	WO 2005IB475	A	20050224	200564	B
US 20050233705	A1	20051020	US 2004548735	P	20040227	200569	E
			US 2004935892	A	20040908		

Priority Applications (no., kind, date): US 2004548735 P 20040227; GB 200412871 A 20040609; US 2004935892 A 20040908

US 20050233705	A1	EN		Patent Related to Provisional	US 2004548735

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
WO 2005083918	A1	EN	67	14	
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW				
Regional Designated States,Original	AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW				

Alerting Abstract WO A1
NOVELTY - A cell data is received from a transmission site within a particular cell. Several quantized signal levels are extracted from received cell data for other two cells that are adjacent to the initial cell. A handover operation is performed based on the quantized signal levels.
DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1. receiver;
2. method of forming a signal for transmission by transmitter of network;
3. method of operating a receiver; and
4. mobile terminal.

USE - For operating mobile terminal (claimed) such as mobile telephone or personal digital assistant (PDA) for reception of terrestrial digital video broadcasting (DVB-T) in **wireless** communications **system**.
ADVANTAGE - Improves handover procedures between cells.
DESCRIPTION OF DRAWINGS - The figure shows the flowchart of process for parsing and utilizing a signaling item containing **bitmap** information during operation of mobile terminal.

Title Terms /Index Terms/Additional Words: OPERATE; METHOD; MOBILE; TERMINAL; EXTRACT; QUANTUM; SIGNAL; LEVEL; CELL; DATA; RECEIVE; TRANSMISSION; SITE; ONE; TWO; ADJACENT; PERFORMANCE

Class Codes

International Patent Classification					
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**
H04B-0001/00	A	I		R	20060101
H04B-0007/00	A	I		R	20060101
H04H-0001/00	A	I		R	20060101
H04L-0027/06	A	I		R	20060101
H04Q-0007/38	A	I		R	20060101
H04B-0001/00	C	I		R	20060101
H04B-0007/00	C	I		R	20060101
H04H-0001/00	C	I		R	20060101
H04L-0027/06	C	I		R	20060101
H04Q-0007/38	C	I		R	20060101

US Classification, Current Main: 455-070000; Secondary: 455-436000
US Classification, Issued: 45570, 455436

File Segment: EPI;
DWPI Class: W01; W02
Manual Codes (EPI/S-X): W01-B05A1A; W02-C03C1D; W02-C05A; W02-F07M1

Dialog eLink: Order File History
26/5/2 (Item 2 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0011174897 *Drawing available*
WPI Acc no: 2002-112671/200215
XRPX Acc No: N2002-083817
Initial transient response estimation method for quartz oscillator, involves calculating time behavior characteristics of signals under specific frequency using solution of artificial differential equation
Patent Assignee: LUCENT TECHNOLOGIES INC (LUCE)
Inventor: BRACHTENDORF H G

Patent Family (1 patents, 1 countries)							
Patent Number	**Kind**	**Date**	**Application Number**	**Kind**	**Date**	**Update**	**Type**
US 6195623	B1	20010227	US 1998153719	A	19980915	200215	B

Priority Applications (no., kind, date): US 1998153719 A 19980915

Patent Details					
Patent Number	**Kind**	**Lan**	**Pgs**	**Draw**	**Filing Notes**
US 6195623	B1	EN	8	3	

Alerting Abstract US B1
NOVELTY - A system of differential algebraic equations are assigned to quartz oscillator. The equation is modified by an artificial partial differential equations representing operation of oscillator. The time behavior characteristics of signals with unknown fundamental frequency are estimated from the numeric solution obtained using artificial equation.
DESCRIPTION - An INDEPENDENT CLAIM is also included for initial transient response characteristics estimating system.
USE - For estimating response characteristics of quartz oscillator used in **RF** communication **system** and **computer aided design** of oscillator.
ADVANTAGE - Time related frequency characteristic of signals are estimated correctly due to use of artificial partial differential equation.
DESCRIPTION OF DRAWINGS - The figure shows the graph representing initial transient response characteristic of quartz oscillator.

Title Terms /Index Terms/Additional Words: INITIAL; TRANSIENT; RESPOND; ESTIMATE; METHOD; QUARTZ; OSCILLATOR; CALCULATE; TIME; CHARACTERISTIC; SIGNAL; SPECIFIC; FREQUENCY; SOLUTION; ARTIFICIAL; DIFFERENTIAL; EQUATE

Class Codes

International Patent Classification					
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**
G06F-0017/50	A	I		R	20060101
G06F-0017/50	C	I		R	20060101

ECLA: G06F-017/50C4
US Classification, Current Main: 703-002000; Secondary: 703-014000, 703-019000
US Classification, Issued: 7032, 70314, 70319
File Segment: EPI;
DWPI Class: T01; W02
Manual Codes (EPI/S-X): T01-J04A; T01-J15; W02-C03E5

Dialog eLink: Order File History
26/5/10 (Item 10 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0007738972 *Drawing available*
WPI Acc no: 1996-362914/199636
XRPX Acc No: N1996-305893
EM wave propagation simulation method for wireless LAN - measuring frequencies of two-dimensional interference data, reproducing EM wave source image, and forming time response function from amplitude and delay
Patent Assignee: ADVANTEST KK (ADVA-N)
Inventor: KITAYOSHI H

Patent Family (19 patents, 3 countries)								
Patent Number	**Kind**	**Date**	**Application Number**	**Kind**	**Date**	**Update**	**Type**
WO 1996023363	A1	19960801	WO 1996JP00189	A	19960123	199636	B
DE 19604270	A1	19960808	DE 19604270	A	19960123	199642	E
JP 8201460	A	19960809	DE 19584908	A	19960123	199642	E
JP 3304590	B2	20020729	JP 1995849	A	19950123	200246	E
DE 19604270	B2	20070329	DE 19584908	A	19960123	200726	E

Priority Applications (no., kind, date): JP 19958495 A 19950123; JP 19958496 A 19950123; JP 19958497 A 19950123

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1996023363	A1	JA	30	7		
National Designated States,Original	DE US					
JP 8201459	A	JA	5			
JP 8201460	A	JA	6			
JP 8204590	A	JA	8			
DE 19680108	T	DE	1		PCT Application	WO 1996JP110
					Based on OPI patent	WO 1996023363
US 5752167	A	EN			PCT Application	WO 1996JP110
					Based on OPI patent	WO 1996023363
DE 19655270	A1	DE			Division of application	DE 19680108
					Division of patent	DE 19680108
JP 3570571	B2	JA	7		Previously issued patent	JP 08201459
JP 3570572	B2	JA	7		Previously issued patent	JP 08201460

Alerting Abstract WO A1

Radio waves having frequencies of f1 and f2 are radiated in an area where a **wireless LAN** is to be **set up**, the radio waves f1 and f2 are separately received with an antenna which scans the surface to be observed and a fixed antenna, and their radio wave holograms are produced. Then radio wave images separated for each path are formed from the holograms, and the amplitude and delay of each path are found by finding the difference between the radio wave images.

The propagation time response function x(t) of each path is found from the amplitude, delay, and the directional characteristics of the antennas and the real part and imaginary part of the function are convoluted in a modulated carrier signal gamma(t). Then the real and imaginary parts are respectively multiplied by the in-phase component Rf and the orthogonal component Rf of a non-modulated carrier. Finally a demodulated base-band signal y(t) is obtained by adding both products to each other.

ADVANTAGE - Simplified structure for simulation of large number of complex reflective objects in complicated arrangements. Accurate simulation of complex paths.

Title Terms /Index Terms/Additional Words: EM; WAVE; PROPAGATE; SIMULATE; METHOD; WIRELESS; LAN; MEASURE; FREQUENCY; TWO-DIMENSIONAL; INTERFERENCE; DATA; REPRODUCE; SOURCE; IMAGE; FORMING; TIME; RESPOND; FUNCTION; AMPLITUDE; DELAY

Class Codes

IPC	International Patent Classification	Scope	Position	Status	Version

	Level				Date
G01R-029/08; H04B-001/10; H04B-017/00			Main		"Version 7"
G01H-017/00; G01R-029/00; G01R-029/08; G01R-029/10; H04B-001/10; H04B-007/00			Secondary		"Version 7"
G01R-0019/10	A	I		R	20060101
H01Q-0003/08	A	I		R	20060101
G01R-0019/10	C	I		R	20060101
H01Q-0003/08	C	I		R	20060101

ECLA: H01Q-003/08
US Classification, Current Main: 455-067110; Secondary: 324-076210, 324-076260, 324-617000, 375-224000 , 455-065000, 455-226100, 455-506000
US Classification, Issued: 45567.1, 45567.6, 455226.1, 45565, 455506, 32476.21, 32476.26, 324617, 375224

File Segment: EPI;
DWPI Class: W02
Manual Codes (EPI/S-X): W02-G03B

Dialog eLink: Order File History
26/5/13 (Item 13 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0005776895 *Drawing available*
WPI Acc no: 1991-340102/199146
XRPX Acc No: N1991-260549
Three-dimensional cellular communication system for office building - has cells stacked in different levels increasing capacity of system and frequency reuse
Patent Assignee: MOTOROLA INC (MOTI)
Inventor: CHANROO K A; CHANROO K A S

JP 5506131	W	Patent Family: 18 countries			19910206	199340	E
Patent Number	**Kind**	**Date**	**Application Number**	**Kind**	**Date**	**Update**	**Type**
WO 9116794	A4	19911031	WO 1991US2793	A	19910416	199147	B
US 5276908	C	19940103	US 1990514465	A	19900425	199402	E
EP 532499	B1	19980909	EP 1991904535	A	19910206	199840	E
			WO 1991US793	A	19910206		

DE 69130168	E	19981015	DE 69130168		A	19910206	199847	E
			EP 1991904535		A	19910206		
			WO 1991US793		A	19910206		
ES 2119772	T3	19981016	EP 1991904535		A	19910206	199849	E

Priority Applications (no., kind, date): US 1990514465 A 19900425

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1991016794	A	EN				
National Designated States,Original	CA DK FI JP KR NO					
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IT LU NL SE					
US 5093925	A	EN	9	4		
EP 532499	A1	EN			PCT Application	WO 1991US793
					Based on OPI patent	WO 1991016794
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
JP 5506131	W	JA			PCT Application	WO 1991US793
					Based on OPI patent	WO 1991016794
EP 532499	A4	EN				
CA 2076662	C	EN				
EP 532499	B1	EN			PCT Application	WO 1991US793
					Based on OPI patent	WO 1991016794
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
DE 69130168	E	DE			Application	EP 1991904535
					PCT Application	WO 1991US793
					Based on OPI patent	EP 532499
					Based on OPI patent	WO 1991016794
ES 2119772	T3	ES			Application	EP 1991904535
					Based on OPI patent	EP 532499

Alerting Abstract WO A

The cellular communication system has, a number of cells on a first level, and a second number of cells on the second level. The system is formed by stacking cells in an offset manner to accommodate frequency reuse in the vertical direction. A repeatable multi-level arrangement of this system are defined in all three dimensions to provide continuous and symmetrical communication throughout the multi-level environment.

USE/ADVANTAGE - For highly localised densities of people in multi-level structures such as tall buildings. @(14pp Dwg.No.2A/5)@

Title Terms /Index Terms/Additional Words: THREE-DIMENSIONAL; CELLULAR; COMMUNICATE; SYSTEM; OFFICE; BUILD; CELL; STACK; LEVEL; INCREASE; CAPACITY; FREQUENCY; REUSE

Class Codes

International Patent Classification					
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**
H04Q-007/22			Main		"Version 7"
H04W-0016/02	A	I		R	20090101
H04W-0016/12	A	I		R	20090101
H04W-0016/00	C	I		R	20090101

ECLA: H04Q-007/36C, H04W-016/02, H04W-016/12
US Classification, Current Main: 455-447000; Secondary: 455-450000
US Classification, Issued: 37959, 45533.1, 45534.1
File Segment: EPI;
DWPI Class: W01; W02
Manual Codes (EPI/S-X): W01-B05; W02-C03C1

26/5/15 (Item 1 from file: 347)
DIALOG(R)File 347: JAPIO

08488294 **Image available**
RADIO RELAY EQUIPMENT

Pub. No.: 2005-236554 [JP 2005236554 A]
Published: September 02, 2005 (20050902)
Inventor: UCHIDA MASAHIKO
Applicant: HITACHI CABLE LTD
Application No.: 2004-041697 [JP 200441697]
Filed: February 18, 2004 (20040218)
International Class: H04B-007/208; H04B-007/26; H04J-001/00; H04J-011/00

ABSTRACT

PROBLEM TO BE SOLVED: To reduce the cost of radio relay equipment being **arranged** in the dead area of a **mobile** communication **system**.

SOLUTION: The radio relay equipment comprises a downlink receiving antenna **3d** principally receiving radio waves of downlink band from the radio base station 2 of a mobile communication system, a downlink band-filter 4d passing the downlink band of received signals selectively, a downlink amplifier 5d for amplifying the passed signals, a downlink transmission antenna 7d for transmitting the radio wave of amplified signal to a mobile station 6, an uplink receiving antenna 7u principally receiving radio waves of uplink band from the mobile station 6, an uplink band-filter 4u passing the uplink band of received signals selectively, an uplink amplifier 5u for amplifying the passed signals, and an uplink transmission antenna 3u for transmitting the radio wave of amplified signal to the radio base station 2. Signals of a partner line are attenuated by utilizing isolation between the antennas.

26/5/16 (Item 2 from file: 347)
DIALOG(R)File 347: JAPIO

07740700 **Image available**
CHIP FILTER,

Pub. No.: 2003-234602 [JP 2003234602 A]
Published: August 22, 2003 (20030822)
Inventor: YABUKI HIROYUKI
Applicant: MATSUSHITA ELECTRIC IND CO LTD
Application No.: 2002-034948 [JP 200234948]
Filed: February 13, 2002 (20020213)
International Class: H01P-001/203; H01P-005/18; H01P-007/08; H01P-011/00

ABSTRACT

PROBLEM TO BE SOLVED: To solve the problems that a component unit price is high for a SAW filter since a piezoelectric body itself is expensive and a fine working technique between electrodes is required and a size is large for a multilayer ceramic filter since a circuit is two-dimensionally formed in an RF band filter used in a **radio** communication **system**.

SOLUTION: By performing **three-dimensional** circuit **formation** for which a plurality of winding wire type microstrip lines 102 are formed as a strip line resonator on the surface layer of a cylindrical dielectric coaxial 101 provided with a ground conductor in the inside, an inexpensive and small-sized RF band filter is realized.

B. Patent Files, Full-Text

```
File 348:EUROPEAN PATENTS 1978-200928
         (c) 2009 European Patent Office
File 349:PCT FULLTEXT 1979-2009/UB=20090709|UT=20090702
         (c) 2009 WIPO/Thomson


Set     Items   Description
S1      21208   CAD OR COMPUTER(1W)AIDED(1W)(DESIGN OR ENGINEERING) OR CAGD
S2      37862   (3D OR (3 OR THREE)()(D OR DIMENSION??)) (3N) (COMPUTER? OR
SOFTWARE OR PROGRAM? ? OR APP OR APPS OR AUTOMAT?? OR SYSTEM? ? OR APPLICATION? ?
OR INTERFACE? ? OR APPT? ? OR SOLUTION? ? OR PLATFORM? ? OR SUITE? ? OR PACKAGE? ?
OR MODEL? OR TOOL? ?)

S3      54594   S1 OR S2
S4       4593   (MESH OR WIRELESS OR MOBILE OR CELLULAR OR RADIO OR 3G OR BROADBAND
OR RF) (2W) (NETWORK? ? OR SYSTEM? ? OR LAN OR LANS OR MAN OR MANS OR (METROPOLITAN
OR LOCAL)()AREA()NETWORK? ?) OR WLAN OR WLANS OR WIMAX OR WIMAXS

S5       1268   S4 (10N) (ASSEMBL??? OR (PUT OR PUTS OR PUTTING OR SET OR
SETTING)()(UP OR IN OR TOGETHER) OR CONSTRUCT??? OR INSTALL? OR HOOK()UP OR HOOKUP
OR HOOKUPS OR PLAC??? OR PLACEMENT OR DEPLOY??? OR DEPLOYMENT OR LAUNCH??? OR
ARRANGEMENT OR ARRANG??? OR DISTRIBUT??? OR FORMATION? ? OR GROUPING OR
IMPLEMENTATION OR IMPLEMENT??? OR ORGANIZATION OR ORGANIZ??? OR POSITION??? OR
STATIONING OR DESIGN???)

S6      10756   (DATABASE OR DATABASES OR DATABANK OR DATABANKS OR DATATABLE OR
DATATABLES OR DATASET OR DATASETS OR DATAFILE OR DATAFILES OR (DATA OR INFORMATION
OR KNOWLEDGE)()(BASE OR BASES OR BANK OR BANKS OR SET OR SETS OR FILE OR FILES OR
TABLE OR TABLES OR NETWORK? ?) OR DB OR KNOWLEDGEBASE OR KNOWLEDGEBASES OR RDBMS OR
DBMS OR OODB) (10N) (3D OR (3 OR THREE)()(D OR DIMENSION??) OR BUILDING? ? OR
STRUCTURE? ? OR FACILIT??? OR REAL()ESTATE OR APARTMENT? ? OR CONDOMINIUM? ? OR
CONDO? ? OR SKYSCRAPER? ? OR HIGH()RISE OR HIGHRISE? ? OR CONSTRUCTION OR TOWER? ?
OR ACADEMIC()HALL? ? OR ENVIRONMENT?? OR AREA? ? OR SITE? ? OR TERRAIN OR
INFRASTRUCTURE OR BASE()STATION? ? OR ANTENNA OR MEASUREMENT? ? OR PATH? ? OR
SIGNAL? ? OR SPECIFICATION? ? OR DEFINITION? ? OR PARAMETER? ? OR CRITERIA? ? OR
PROPERTIES OR GEOMETR??? OR ELEVATION? ? AND LAND()USE OR HEIGHT? ?)

S7      40408   DEFINITION? ? OR PARAMETER? ? OR CRITERIA? ? OR PROPERT???
S8      15238   (SCAL??? OR RESIZ??? OR STRETCH??? OR PROPORTIONAL?? OR RESAMPL???
OR ENLARG??? OR REDUC??? OR SHRINK??? OR COMPRESS??? OR EXPAND??? OR INCREAS??? OR
DECREAS??? OR SMALLER OR LARGER OR SIZE) (5N) (IMAGE? ? OR MODEL? ? OR PICTURE? ?
OR PHOTO? ? OR PHOTOGRAPH? ? OR DRAWING? ? OR MAP? ?)

S9       7680   RASTER()IMAGE? ? OR OPENRASTER OR BITMAP? ? OR PIXMAP? ? OR GIF OR
JPG OR BMP OR JPEG OR (DIGITAL OR AUTOCAD) (2N) (IMAGE? ? OR MODEL? ? OR PICTURE? ?
OR PHOTO? ? OR PHOTOGRAPH? ? OR DRAWING? ?) OR (INTERNET OR ONLINE OR ON()LINE OR
WEB OR ELECTRONIC OR CYBER) (5N) MAP? ?

S10        18   AU=(RAPPAPORT, T? OR RAPPAPORT T? OR RAPPAPORT (1N) (T OR THEODORE)
OR SKIDMORE, R? OR SKIDMORE R? OR SKIDMORE (1N) (R OR ROGER))

S11       532   S3 (S) S4
S12       118   S11 (S) S5
S13        23   S12 (S) S6
```

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S14          2   S13 NOT AY>1999
S15       2211   S1 (S) S2
S16         19   S15 (S) S4
S17         19   S16 NOT S14
S18          0   S17 NOT AY>1999
S19        174   S3 (5N) S4
S20         11   S19 (S) S6
S21          1   S20 NOT AY>1999
S22          1   S21 NOT S14
S23        124   S3 (S) S5
S24         41   S23 (S) (S6 OR S7 OR S8 OR S9)
S25          5   S24 NOT AY>1999
S26          3   S25 NOT (S14 OR S22)
S27        104   S1 (S) S4
S28         56   S27 (S) (S5 OR S6 OR S7 OR S8 OR S9)
S29          6   S28 NOT AY>1999
S30          6   S29 NOT (S14 OR S22 OR S26)
S31         18   S10 AND S3
S32         17   S31 AND S4
S33         15   S32 AND S5
S34         15   S33 AND S6
S35         15   S34 AND S7
S36          4   S35 AND S8
S37          4   S36 AND S9
```

Dialog eLink: Order File History
14/3K/2 (Item 1 from file: 349)
DIALOG(R)File 349: PCT FULLTEXT

00340063

CONTROL SYSTEMS BASED ON SIMULATED VIRTUAL MODELS
SYSTEMES DE COMMANDE BASES SUR DES MODELES VIRTUELS SIMULES

Patent Applicant/Patent Assignee:

- **INTERTECH VENTURES LTD**;
  ; ;
- **THALHAMMER-REYERO Cristina**;
  ; ;

	Country	Number	Kind	Date
Patent	WO	9622575	A1	19960725
Application	WO	96US883		19960117
Priorities	US	95373688		19950117
	US	95373992		19950117

Designated States: (All protection types applied unless otherwise stated - for applications 2004+)

Language Publication Language: English

Filing Language:

Fulltext word count: 135683

Detailed Description:

...the progression of populations of cells through different states by means of the sets of pools of cells and processes characteristic of this invention.

FIG.**3** is an schematic representation of the multiple lavers of linked pools of entities and processes the result in the multidimensional pathways characteristic of this invention... production system or biofermentor. This control system provides simultaneous supervision of numerous operating variables (such as intermediarx, or end-products, which in the case of **cellular systems** can.

be intracellular or secreted), and compares them with the simulated values of those variables resulting from the encapsulated mathematical models. Depending on the dynamically... classes is now described. Table 1 shows the different classes of obiects and groups of tools and methods comprised in this invention, which are ail **knowledge structures** implemented as objects. Those tools and methods are preferably organized into major groups, each comprising several object classes, which mav each further comprise several levels...of other objects in the Virtual Model; c) one or more values originating from any external source interfaced with the svstem, such as external sensors, **databases**, or external simulators; d) anv auxiliani independent constant, **parameter**, or variable; e) anv timer or meter- or 0 an
r combination of the above.

As shown in FIG clicking on an instance of model...other objects in the Virtual Model; c) one or more values originati% trom anv extemal source interfaced with the svsteni, such a!; external sen@or,@, **databases**, or external @miulator@ di 3nv auxiliary independent constant, **parameter**, or variable, e) ariv tinier or meter; or f) anv combination tit the above.

Class button
The class button (Table 24) is a subclass ot...simulation is run. The values of some of the attril,ute, of a bioReservoir characterize the svstem and are stored as part of the permanent **database**. The value!- (it other **parameters** and variables pertaining to a bioReservoir which are computed when a simulation is run, but which do not usually require to be set by the...the application has been restarted, then the "Query Init" button should be selected. The common purpose of both buttons is to organize knowledge about the **structure** of all the bioEntities in the application, and to create a set of **structures** to hold that knowledge, to be used any time that the user request a predefined query that involves that kind of knowledge. Selecting the "Add...

26/3K/1 (Item 1 from file: 348)
DIALOG(R)File 348: EUROPEAN PATENTS

01079136

Virtual reality technology
Technik zur virtuellen Realitat
Technologie a realite virtuelle

Patent Assignee:

- **Trisen Systems Inc.**; (2739200)
  4445 West 77th Street, Suite 214; Edina, Minnesota 55435; (US)
  (Applicant designated States: all)

Inventor:

- **Meisner, Jeffrey A.**
  3113 40th Avenue South; Minneapolis, Minnesota 55406; (US)
- **Roosen, Richard**
  2541 Aldrich Avenue South; No. 2, Minneapolis, Minnesota 55405; (US)
- **Donnelly, Walter**
  6108 Sherman Circle; Edina, Minnesota 55436; (US)

Legal Representative:

- **Dunleavy, Kevin James et al (78764)**
  Knoble & Yoshida, p/o De Vries & Metman, Overschiestraat 180; 1062 XK Amsterdam; (NL)

	Country	Number	Kind	Date	
Patent	EP	949513	A2	19991013	(Basic)
	EP	949513	A3	20000927	
Application	EP	99302756		19990408	
Priorities	US	81051		19980408	

Designated States:
AT; BE; CH; DE; DK; ES; FI; FR; GB; GR;
IE; IT; LI; NL; PT; SE;

Extended Designated States:
AL; LT; LV; MK; RO; SI;

International Patent Class (V7): G01S-005/16**Abstract Word Count:** 246
NOTE: 1
NOTE: Figure number on first page: 1

Legal Status Type	Pub. Date	Kind	Text

Language Publication: English
Procedural: English
Application: English

Fulltext Availability Available Text	Language	Update	Word Count
CLAIMS A	(English)	9941	3641
SPEC A	(English)	9941	6478
Total Word Count (Document A) 10119			
Total Word Count (Document B) 0			
Total Word Count (All Documents) 10119			

Specification: ...guided to properly place or otherwise interact with real objects in an augmented view. The registration process conducted by the tracker system calculates six tracking **parameters** that determines the relative position and orientation between at least one real world object or target and at least one sensor. The tracking **parameters** include three orientation **parameters** (the angles phi, theta and psi) and three position **parameters** (distance (L) and the intercept of the user's line of sight with the fiducial plane (X-bar and Y-bar)). The tracker system continuously calculates or tracks these **parameters** because the target(s) and / or the sensor(s) are **mobile**.

An AR **system** operates within a volume formed by boundaries defined by the **position** of the sensor(s) and the tracked, real world objects). The tracking system may be designed as either a 2-dimensional or 3-dimensional tracker...

Dialog eLink: Order File History
26/3K/3 (Item 3 from file: 348)
DIALOG(R)File 348: EUROPEAN PATENTS

00347784

Selective system scan for multizone radiotelephone subscriber units
Selektives Suchlaufsystem fur Mehrzonen-Funktelefon
Systeme d'exploration selectif pour poste radio-telephonique multizone

Patent Assignee:

- **MOTOROLA, INC.**; (205770)
  1303 East Algonquin Road; Schaumburg, IL 60196; (US)
  (applicant designated states: AT;BE;CH;DE;ES;FR;GB;GR;IT;LI;LU;NL;SE)

Inventor:

- **Krolopp, Robert K.**
  652 Claridge Circle; Hoffman Estates Illinois 60194; (US)
- **Achter, Thomas J.**
  16 Ashbury Lane; Barrington Illinois 60010; (US)
- **Mullins, Jeffrey L.**
  1560 Gatewood; Palatine Illinois 60067; (US)

Legal Representative:

- **Dunlop, Hugh Christopher et al (59551)**
  Motorola, European Intellectual Property Operations Midpoint Alencon Link; Basingstoke, Hampshire RG21 7PL; (GB)

	Country	Number	Kind	Date	
Patent	EP	352786	A2	19900131	(Basic)
	EP	352786	A3	19911023	
	EP	352786	B1	19940126	
Application	EP	89113864		19890727	
Priorities	US	225337		19880728	

Designated States:
AT; BE; CH; DE; ES; FR; GB; GR; IT; LI;
LU; NL; SE;

International Patent Class (V7): H04Q-007/32**Abstract Word Count:** 73

Legal Status Type	Pub. Date	Kind	Text

Language Publication: English
Procedural: English
Application: English

Fulltext Availability Available Text	Language	Update	Word Count
CLAIMS B	(English)	9914	674
CLAIMS B	(German)	9914	575
CLAIMS B	(French)	9914	811
SPEC B	(English)	9914	3345
Total Word Count (Document A) 0			
Total Word Count (Document B) 5405			
Total Word Count (All Documents) 5405			

Specification: ...a telephone call), a duplex radio channel is dedicated in each cell to allow a subscriber access to the system (called an access channel). Further **definition** of cellular radiotelephone systems may be found in EIA Interim Standard IS-**3**-D (March, 1987); " **Cellular System**, Mobile Station-Land Station Compatibility Specification", Electronic Industries **Association**.

In operation, a subscriber station first scans a stored list of control channels which are assigned one per cell and used by the cellular radiotelephone **system** to convey digital control information from the fixed equipment to subscriber stations **and to** convey digital control **information** from a subscriber station to the fixed equipment. (The control channel in a cell may also be used as a paging channel and as an...

Dialog eLink: Order File History
30/3K/2 (Item 2 from file: 348)
DIALOG(R)File 348: EUROPEAN PATENTS

00486105

Broadband switching networks
Breitband-Vermittlungsnetze
Reseaux de commutation a large bande

Patent Assignee:

- **KABUSHIKI KAISHA TOSHIBA**; (213130)
  72, Horikawa-cho, Saiwai-ku; Kawasaki-shi, Kanagawa-ken 210-8572; (JP)
  (Proprietor designated states: all)

Inventor:

- **Kobayashi, Hiroshi, c/o Intellectual Prop. Div.**
  Kabushiki Kaisha Toshiba, 1-1, Shibaura 1-chome; Minato-ku, Tokyo; (JP)
- **Hidaka, Yoshiharu, c/o Intellectual Prop. Div.**
  Kabushiki Kaisha Toshiba, 1-1, Shibaura 1-chome; Minato-ku, Tokyo; (JP)
- **Aida, Kazuo, c/o Intellectual Prop. Div.**
  Kabushiki Kaisha Toshiba, 1-1, Shibaura 1-chome; Minato-ku, Tokyo; (JP)
- **Ikeda, Takashi, c/o Intellectual Prop. Div.**
  Kabushiki Kaisha Toshiba, 1-1, Shibaura 1-chome; Minato-ku, Tokyo; (JP)
- **Yano, Motomitsu, c/o Intellectual Prop. Div.**
  Kabushiki Kaisha Toshiba, 1-1, Shibaura 1-chome; Minato-ku, Tokyo; (JP)
- **Kamura, Kouichirou, c/o Intellectual Prop. Div.**
  Kabushiki Kaisha Toshiba, 1-1, Shibaura 1-chome; Minato-ku, Tokyo; (JP)

Legal Representative:

- **Freed, Arthur Woolf et al (30751)**
  MARKS & CLERK, 57-60 Lincoln's Inn Fields; London WC2A 3LS; (GB)

	Country	Number	Kind	Date	
Patent	EP	468802	A2	19920129	(Basic)
	EP	468802	A3	19921202	
	EP	468802	B1	20010919	
Application	EP	91306828		19910726	
Priorities	JP	90199948		19900727	

Designated States:
DE; FR; GB;

International Patent Class (V7): H04L-012/56; H04Q-011/04**Abstract Word Count:** 143
NOTE: 1
NOTE: Figure number on first page: 1

Legal Status Type	Pub. Date	Kind	Text

Language Publication: English
Procedural: English

Application: English

Fulltext Availability Available Text	Language	Update	Word Count
CLAIMS A	(English)		1015
SPEC A	(English)		16845
CLAIMS B	(English)	200138	660
CLAIMS B	(German)	200138	609
CLAIMS B	(French)	200138	836
SPEC B	(English)	200138	16761
Total Word Count (Document A) 17861			
Total Word Count (Document B) 18866			
Total Word Count (All Documents) 36727			

Specification: ...developments of the ISDN network have been initiated by CCITT (International Telegraph and Telephone Consultative Committee) and promoted in major laboratories in the world.

The **broadband** ISDN **network** is provided with an ultra high speed user-network interface with a transmission speed of 155.52 Mbps or 622.08 Mbps. Thus, through the... ...as a constant speed service CBR (Continuous Bit Rate), while computer data with large capacity and ultra high speed including motion pictures, such as, high **definition** TV pictures, **CAD** (**Computer Aided Design**) data, and computer graphics data, and so forth can be treated as a variable speed service VBR (Variable Bit Rate). Thus, with the CBR and...

Specification: ...developments of the ISDN network have been initiated by CCITT (International Telegraph and Telephone Consultative Committee) and promoted in major laboratories in the world.

The **broadband** ISDN **network** is provided with an ultra high speed user-network interface with a transmission speed of 155.52 Mbps or 622.08 Mbps. Thus, through the... ...as a constant speed service CBR (Continuous Bit Rate), while computer data with large capacity and ultra high speed including motion pictures, such as, high **definition** TV pictures, **CAD** (**Computer Aided Design**) data, and computer graphics data, and so forth can be treated as a variable speed service VBR (Variable Bit Rate). Thus, with the CBR and...

IV. Text Search Results from Dialog

A. NPL Files, Abstract

```
File  35:Dissertation Abs Online 1861-2009/Jun
         (c) 2009 ProQuest Info&Learning
File 474:New York Times Abs 1969-2009/Jul 16
         (c) 2009 The New York Times
File 475:Wall Street Journal Abs 1973-2009/Jul 16
         (c) 2009 The New York Times
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
         (c) 2002 Gale/Cengage
File  65:Inside Conferences 1993-2009/Jul 14
         (c) 2009 BLDSC all rts. reserv.
File  99:Wilson Appl. Sci & Tech Abs 1983-2009/Jun
         (c) 2009 The HW Wilson Co.
File   2:INSPEC 1898-2009/Jul W1
         (c) 2009 The IET
File 256:TecTrends 1982-2009/Jul W2
         (c) 2009 Info.Sources Inc. All rights res.


Set     Items   Description
S1     182569   CAD OR COMPUTER(1W)AIDED(1W)(DESIGN OR ENGINEERING) OR CAGD
S2     156036   (3D OR (3 OR THREE)()(D OR DIMENSION??)) (5N) (COMPUTER? OR
SOFTWARE OR PROGRAM? ? OR APP OR APPS OR AUTOMAT?? OR SYSTEM? ? OR APPLICATION? ?
OR INTERFACE? ? OR APPT? ? OR SOLUTION? ? OR PLATFORM? ? OR SUITE? ? OR PACKAGE? ?
OR MODEL? OR TOOL? ?)

S3     330139   S1 OR S2
S4       2267   (MESH OR WIRELESS OR MOBILE OR CELLULAR OR RADIO OR 3G OR BROADBAND
OR RF) (2W) (NETWORK? ? OR SYSTEM? ? OR LAN OR LANS OR MAN OR MANS OR (METROPOLITAN
OR LOCAL)()AREA()NETWORK? ?) OR WLAN OR WLANS OR WIMAX OR WIMAXS

S5        756   S4 (10N) (ASSEMBL??? OR (PUT OR PUTS OR PUTTING OR SET OR
SETTING)()(UP OR IN OR TOGETHER) OR CONSTRUCT??? OR INSTALL? OR HOOK()UP OR HOOKUP
OR HOOKUPS OR PLAC??? OR PLACEMENT OR DEPLOY??? OR DEPLOYMENT OR LAUNCH??? OR
ARRANGEMENT OR ARRANG??? OR DISTRIBUT??? OR FORMATION? ? OR GROUPING OR
IMPLEMENTATION OR IMPLEMENT??? OR ORGANIZATION OR ORGANIZ??? OR POSITION??? OR
STATIONING OR DESIGN???)

S6       8426   (DATABASE OR DATABASES OR DATABANK OR DATABANKS OR DATATABLE OR
DATATABLES OR DATASET OR DATASETS OR DATAFILE OR DATAFILES OR (DATA OR INFORMATION
OR KNOWLEDGE)()(BASE OR BASES OR BANK OR BANKS OR SET OR SETS OR FILE OR FILES OR
TABLE OR TABLES OR NETWORK? ?) OR DB OR KNOWLEDGEBASE OR KNOWLEDGEBASES OR RDBMS OR
DBMS OR OODB) (10N) (3D OR (3 OR THREE)()(D OR DIMENSION??) OR BUILDING? ? OR
STRUCTURE? ? OR FACILIT??? OR REAL()ESTATE OR APARTMENT? ? OR CONDOMINIUM? ? OR
CONDO? ? OR SKYSCRAPER? ? OR HIGH()RISE OR HIGHRISE? ? OR CONSTRUCTION OR TOWER? ?
OR ACADEMIC()HALL? ? OR ENVIRONMENT?? OR AREA? ? OR SITE? ? OR TERRAIN OR
INFRASTRUCTURE OR BASE()STATION? ? OR ANTENNA OR MEASUREMENT? ? OR PATH? ? OR
SIGNAL? ? OR SPECIFICATION? ? OR DEFINITION? ? OR PARAMETER? ? OR CRITERIA? ? OR
PROPERTIES OR GEOMETR??? OR ELEVATION? ? AND LAND()USE OR HEIGHT? ?)
```

```
S7      52540   DEFINITION? ? OR PARAMETER? ? OR CRITERIA? ? OR PROPERT???
S8      10925   (SCAL??? OR RESIZ??? OR STRETCH??? OR PROPORTIONAL?? OR RESAMPL???
OR ENLARG??? OR REDUC??? OR SHRINK??? OR COMPRESS??? OR EXPAND??? OR INCREAS??? OR
DECREAS??? OR SMALLER OR LARGER OR SIZE) (5N) (IMAGE? ? OR MODEL? ? OR PICTURE? ?
OR PHOTO? ? OR PHOTOGRAPH? ? OR DRAWING? ? OR MAP? ?)

S9       3765   RASTER()IMAGE? ? OR OPENRASTER OR BITMAP? ? OR PIXMAP? ? OR GIF OR
JPG OR BMP OR JPEG OR (DIGITAL OR AUTOCAD) (2N) (IMAGE? ? OR MODEL? ? OR PICTURE? ?
OR PHOTO? ? OR PHOTOGRAPH? ? OR DRAWING? ?) OR (INTERNET OR ONLINE OR ON()LINE OR
WEB OR ELECTRONIC OR CYBER) (5N) MAP? ?

S10         8   AU=(RAPPAPORT, T? OR RAPPAPORT T? OR RAPPAPORT (1N) (T OR THEODORE)
OR SKIDMORE, R? OR SKIDMORE R? OR SKIDMORE (1N) (R OR ROGER))

S11      2267   S3 AND S4
S12       756   S11 AND S5
S13        20   S12 AND S6
S14        13   S13 NOT PY>1999
S15        13   RD  (unique items)
S16       400   S11 AND S7
S17        14   S16 AND S8
S18         1   S17 AND S9
S19       188   S3()S5
S20         6   S19 AND S6
S21         1   S20 NOT S15
S22         1   S21 NOT S18
S23      2267   S3 AND S4
S24        97   S23 AND S6
S25        28   S24 AND (S7 OR S8 OR S9)
S26        15   S25 NOT PY>1999
S27        11   S26 NOT (S15 OR S18 OR S22)
S28        11   RD  (unique items)
S29         8   S10 AND S3
S30       516   IN()BUILDING
S31       516   S30 AND S3
S32        10   S31 AND S4
S33         4   S32 NOT PY>1999
S34         4   S33 NOT (S15 OR S18 OR S22 OR S28 OR S29)
```

15/5/1 (Item 1 from file: 35)
DIALOG(R)File 35: Dissertation Abs Online

01174439 ORDER NO: AAD91-26678
COMPUTER-AIDED DESIGN OF COMMUNICATION NETWORKS FOR DISTRIBUTION AUTOMATION (NETWORKS, INTEGRATED DESIGN, PACKET RADIO NETWORKS)

Author: LUN, SHAU MING
Degree: PH.D.
Year: 1990
Corporate Source/Institution: UNIVERSITY OF CALIFORNIA, BERKELEY (0028)
Chairman: FELIX F. WU
Source: Volume 5204B of Dissertations Abstracts International.
PAGE 2218 . 179 PAGES
Descriptors: ENGINEERING, ELECTRONICS AND ELECTRICAL

Descriptor Codes: 0544

Distribution automation requires a multi-purpose, multi-media integrated communication system. To design such a complex system, sophisticated **computer-aided-design** tools are needed. In order to manage these tools efficiently, an integrated design environment for the design process is essential. In this dissertation, a comprehensive study of an integrated design environment for distribution automation communication systems is presented. The basic structure of the proposed environment is defined and some major components of the **environment** are identified including a shared **database**, synthesis tools and analysis tools.

The dissertation is divided into three portions. Each portion deals with one major component of the proposed environment.

In the first portion, a structural representation of the communication system for distribution automation is proposed, which can also serve as the foundation of the shared **database** in the proposed **environment**. Basic abstract elements of the representation and their relationships are defined. Important issues in the design of communication protocols are identified. The proposed architecture provides a framework for the design of the communication system.

In the second portion, a synthesis tool that generates the routing tables of the packet **radio network** for **distribution** automation is developed. An analytical model of the packet **radio network** is presented. Mathematical properties of the model are derived. Based on this model, a new formulation of the routing algorithm that minimizes the average delay, including both congestion and transmission delay, is presented. An algorithm to solve the optimization problem is proposed based on a "flow deviation" approach and the convergence properties of the algorithm are established.

Simulation tools are used for the analysis and verification of system performance. In the final portion, the design of a discrete event simulator for distribution automation is presented. The simulator is based on the structural representation developed in the first portion. The simulator is designed to serve as a prototype testbed for distribution automation systems. A distributed implementation is considered to improve the performance of the simulator. A prototype has been developed to model the routing algorithm developed in the second portion with satisfactory results.

15/5/2 (Item 2 from file: 35)
DIALOG(R)File 35: Dissertation Abs Online

882130 ORDER NO: AAD85-10866
AN ELECTRONIC SIMULATION OF VERY LARGE SCALE INTEGRATED (VLSI) CELLULAR SYSTEMS

Author: MITTAL, MANMOHAN
Degree: PH.D.
Year: 1985
Corporate Source/Institution: WASHINGTON STATE UNIVERSITY (0251)
Source: Volume 4603B of Dissertations Abstracts International.
PAGE 922 . 105 PAGES
Descriptors: ENGINEERING, ELECTRONICS AND ELECTRICAL
Descriptor Codes: 0544

In this dissertation a new technique and algorithm of an electronic simulator, for verifying the **designs** of very large scale or wafer scale integrated (VLSI/WSI) **cellular systems**, has been developed and presented. This simulator is **designed** to provide the most critical electronic information, i.e., intercell voltage levels, fan-in/fan-out violations and timing details, at each node of the interconnected system economically and efficiently, without doing a complete circuit level simulation. In this method, the static and dynamic behaviors of the cells are modeled by new Dynamic Reduced Order Models; developed in this dissertation using spline functions. The additional time delays, contributed by the unaccounted routing paths between cells are also included in complete simulation for precise results. This elegant feature of the simulator facilitates obtaining an optimum performance and compact layout of the system. To store the model **parameters** of every cell, a simple relational **database** was also developed for an efficient simulation. In comparison with SPICE for similar information, this **computer-aided design** tool is much faster and more economical to use in an iterative design procedure.

15/5/4 (Item 2 from file: 2)
DIALOG(R)File 2: INSPEC

07497396
Title: 1999 IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM 1999). Conference Proceedings (Cat. No.99CH36368)
Publisher: IEEE, Piscataway, NJ
Country of Publication: USA
Publication Date: 1999
Conference Title: 1999 IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM 1999). Conference Proceedings
Conference Date: 22-24 Aug. 1999
Conference Location: Victoria, BC, Canada
Conference Sponsor: IEEE Canada (Region 7) IEEE Victoria Sect. Univ. Victoria
ISBN: 0 7803 5582 2
U.S. Copyright Clearance Center Code: 99/$10.00
Item Identifier (DOI): 10.1109/PACRIM.1999.799462
Number of Pages: xv+618
Language: English
Document Type: Conference Proceedings (CP)
Abstract: The following topics were dealt with: ATM networks; high-speed communication systems; database and knowledge base systems; real-time systems; wavelets; image and video processing; ATM traffic control; interference cancellation; parallel processing; VLSI; **cellular** communication **systems**; **system design** and **implementation**; Internet application support; VLSI **CAD** and FPGA; digital filters; coding and modulation; network architecture; software engineering; speech and audio processing; integrated circuit and logic design; distributed multimedia; VLSI design and implementation; intelligent signal processing in communications; spatial-temporal receiver techniques; distributed applications; signal detection and interpolation; signal acquisition techniques; dynamic systems analysis and identification
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering)
Descriptors: asynchronous transfer mode; audio **signal** processing; cellular **radio**; **database** management **systems**; digital filters; **distributed** processing; encoding; image processing; interference suppression; knowledge based systems; logic **CAD**; modulation; multimedia systems; parallel processing; real-time systems; signal detection; signal processing; software engineering; speech processing; telecommunication; telecommunication traffic; video signal processing; VLSI ; wavelet transforms
Identifiers: ATM networks; high-speed communication systems; database systems; knowledge base systems; real-time systems; wavelets; image processing; video processing; ATM traffic control; interference cancellation; parallel processing; **cellular** communication **systems**; Internet application support; VLSI **CAD**; FPGA; digital filters; coding; modulation; network architecture; software engineering; speech processing; audio processing; integrated circuit design; logic design; distributed multimedia; VLSI design; intelligent signal processing; communications; spatial-temporal receiver techniques; distributed applications; signal detection; interpolation; signal acquisition techniques; dynamic systems analysis
Classification Codes: B0100 (General electrical engineering topics); B6200 (Telecommunication); B6100 (Information and communication theory); B2570 (Semiconductor integrated circuits); C5000 (Computer hardware); C5260 (Digital signal processing); C6100 (Software techniques and systems); C7400 (Engineering computing)
INSPEC Update Issue: 2000-006

15/5/8 (Item 6 from file: 2)
DIALOG(R)File 2: INSPEC

05962554
Title: Use of satellite images to produce digital geographic data. Example of application: planning of a cellular telephone network

Author(s): Le Roux, H.
Author Affiliation: ISTAR, Valbonne, France
Book Title: Proceedings Geographic Information and Business Processes
Inclusive Page Numbers: 215-18
Publisher: AKM Messen AG, Basel
Country of Publication: Switzerland
Publication Date: 1994
Conference Title: Proceedings of Geographic Information and Business Processes
Conference Date: 18-20 Oct. 1994
Conference Location: Heidelberg, Germany
Conference Sponsor: AM/FM Int. - Eur. Div
ISBN: 3 905084 32 5
Number of Pages: v+284
Language: English
Document Type: Conference Paper (PA)
Treatment: Application (A); Practical (P)
Abstract: This paper presents the ISTAR digital cartographic products used by telecommunication companies in **deploying** their **mobile radio networks**. These products, made from satellite and aerial images include: DTM (Digital **terrain** model), orthoimages, landcover and clutter, urban **databases** and **3D buildings databases** (*0 refs.*)
Subfile(s): C (Computing & Control Engineering)
Descriptors: cartography; cellular **radio**; geographic information **systems**; image processing; town and country planning
Identifiers: satellite images; digital geographic data; **cellular** telephone **network** planning; ISTAR; digital cartographic products; telecommunication companies; **mobile radio networks**; aerial images; DTM; digital **terrain model**; orthoimages; landcover; clutter; urban **databases**; **3D buildings databases**
Classification Codes: C7840 (Geography and cartography computing); C7130 (Public administration); C6160S (Spatial and pictorial databases)
INSPEC Update Issue: 1995-021

15/5/11 (Item 9 from file: 2)
DIALOG(R)File 2: INSPEC

05012660
Title: Tenth Annual International Phoenix Conference on Computers and Communications (Cat. No.91CH2959-5)
Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA
Country of Publication: USA
Publication Date: 1991
Conference Date: 27-30 March 1991
Conference Location: Scottsdale, AZ, USA
Conference Sponsor: IEEE Arizona State Univ. Univ. Arizona
ISBN: 0 8186 2133 8
Item Identifier (DOI): 10.1109/PCCC.1991.113775
Number of Pages: xviii+857
Language: English
Document Type: Conference Proceedings (CP)
Abstract: The following topics are dealt with: real time architectures and applications; neural network implementation and applications; parallelism and computational paradigms of the future; fault tolerance and reliability; performance **measurement** and evaluation; distributed **database** systems; parallel and distributed architectures; parallel and distributed algorithms and applications; distributed operating systems; algorithms for distributed operating systems; languages and environments; object-oriented systems; specification methodologies; software engineering; communications theory; recent advances in mobile digital radio; advanced topics in communications systems; digital communications; theory and applications of non-uniform sampling; fiber optics; frame relay networks; network management and standards; protocol **design**; network performance; local **area** networks; wide **area** and **broadband networks**; multimedia **database** systems;

graphics and multimedia: **computer aided design**; deductive systems; expert system applications; and AI techniques and expert systems
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering); E (Mechanical & Production Engineering)
Descriptors: artificial intelligence; **CAD**; computer networks; digital communication systems; expert systems; fault tolerant computing; network operating systems; neural nets; object-oriented databases; parallel architectures; performance evaluation; software engineering
Identifiers: performance evaluation; parallel architectures; parallel algorithms; wide area networks; artificial intelligence; real time architectures; neural network; parallelism; computational paradigms; fault tolerance; reliability; performance **measurement**; distributed **database** systems; distributed architectures; distributed algorithms; distributed operating systems; languages; **environments**; object-oriented systems; specification methodologies; software engineering; communications theory; mobile digital radio; digital communications; fiber optics; frame relay networks; network management; standards; protocol **design**; network performance; local **area** networks; **broadband networks**; multimedia **database** systems; **computer aided design**; deductive systems; expert system
Classification Codes: B0100 (General electrical engineering topics); B6210 (Telecommunication applications); C5620 (Computer networks and techniques); C5440 (Multiprocessing systems); C5220 (Computer architecture); C6170 (Expert systems and other AI software and techniques); C1230 (Artificial intelligence); C6110B (Software engineering techniques); C5470 (Performance evaluation and testing); E1400 (Design)
INSPEC Update Issue: 1991-023

15/5/13 (Item 11 from file: 2)
DIALOG(R)File 2: INSPEC

01746067
Title: AVM-is there a system for your city?
Author(s): Hansen, G.R.
Author Affiliation: California Inst. Technol., Pasadena, CA, USA
Inclusive Page Numbers: 224-7
Publisher: Univ. Kentucky, Lexington, KY
Country of Publication: USA
Publication Date: 1974
Conference Title: 1974 Carnahan and International Crime Countermeasures Conference
Conference Date: 16-19 April 1974
Conference Location: Lexington, KY, USA
Conference Sponsor: Univ. Kentucky IEEE
Editor(s): Jackson, J.S.
Number of Pages: vii+268
Language: English
Document Type: Conference Paper (PA)
Treatment: Application (A)
Abstract: The **areas** addressed by this work are the development of an AVM **data base** and conceptual system designs in model and real cities leading to the **definition** of an AVM synthesis computer program. The **data base** is necessary to provide both the technical performance characteristics and the basis for cost estimations of the system elements. The system designs are required to determine the design algorithms as well as the effects of the environmental and optional modes of operation on the system elements and performance. Implementation cost estimates for application of various alternative systems to three model cities are tabulated (*0 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering)
Descriptors: communications applications of computers; **computer**-aided **design**; **mobile** communication **systems**; monitoring; vehicles
Identifiers: automatic vehicle monitoring; data base; conceptual system designs; real cities; cost estimates; model cities
Classification Codes: B6250F (Mobile radio systems); C3120C (Spatial variables control); C3360B (Road-traffic system control); C3370L (Control applications in remote signalling, dispatching and safety devices); C7410F (Communications

computing)
INSPEC Update Issue: 1975-004
Copyright: 1975, IEE

18/5/1 (Item 1 from file: 2)
DIALOG(R)File 2: INSPEC

02212409
Title: Airborne modeling and computer graphic simulation of microwave network performance
Author(s): Elmore, E.P., Jr.
Author Affiliation: Elmore Electronics Inc., Reston, VA, USA
Inclusive Page Numbers: 33-8
Publisher: IEEE, New York, NY
Country of Publication: USA
Publication Date: 1977
Conference Title: EUROCON '77 Proceedings on Communications
Conference Date: 3-7 May 1977
Conference Location: Venice, Italy
Conference Sponsor: IEEE EUREL URSI
Part: I
Number of Pages: 715
Language: English
Document Type: Conference Paper (PA)
Treatment: Application (A)
Abstract: Propagation over each microwave path is determined uniquely by the terrestrial interface of the radiated beam. Bending by atmospheric refraction varies this interface dynamically to produce complex diffraction and interference. Computer simulation of microwave network performance requires a realistic geophysical model of each terrestrial path with refractive gradient variations. Air-borne radar remote sensing and meteorological recordings provide a magtape model of Earth and air **parameters** suitable for digital **computer** input. Path geodetic control assures **three-dimensional scale model** accuracy. Diffraction over all obstructions is simulated from the precision radar profile of the full path strip. Multi-surface interference is simulated from the terrain reflectivity and masking obstructions. Continuous recording of atmospheric temperature, pressure, humidity and altitude during all flight time permits computer analysis of refractivity gradients with diurnal, geographical and seasonal time distributions (*2 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering)
Descriptors: communications computing; computer graphics; digital simulation; electromagnetic wave refraction; microwave links; radar applications; **radio networks**; remote sensing
Identifiers: computer graphic simulation; atmospheric refraction; microwave network performance; geophysical **model**; meteorological recordings; **digital** computer input; **scale model** accuracy; terrain reflectivity; masking obstructions; airborne radar remote sensing
Classification Codes: B5210C (Radiowave propagation); B6250D (Point-to-point radio systems); B7310N (Microwave measurement techniques); B7730 (Other remote sensing applications in Earth sciences); C3370H (Control applications in radio and radar); C7410F (Communications computing)
INSPEC Update Issue: 1978-006
Copyright: 1978, IEE

Dialog eLink: USPTO Full Text Retrieval Options
22/5/1 (Item 1 from file: 2)
DIALOG(R)File 2: INSPEC

08496563
Title: A compact LTCC-based Ku-band transmitter module

Author(s): Chang-Ho Lee; Sutono, A.; Sangwoo Han; Kyutae Lim; Pinel, S.; Tentzeris, E.M.; Laskar, J.
Author Affiliation: RF Solutions Inc., Norcross, GA, USA
Journal: IEEE Transactions on Advanced Packaging , vol.25 , no.3 , pp.374-84
Publisher: IEEE
Country of Publication: USA
Publication Date: Aug. 2002
ISSN: 1521-3323
SICI: 1521-3323(200208)25:3L.374:CLBB;1-V
CODEN: ITAPFZ
U.S. Copyright Clearance Center Code: 1521-3323/02/$17.00
Item Identifier (DOI): 10.1109/TADVP.2002.805315
Language: English
Document Type: Journal Paper (JP)
Treatment: Application (A); Practical (P); Experimental (X)
Abstract: Presents **design**, implementation, and measurement of a three-dimensional (**3-D**)-deployed RF front-end **system**-on-package (SOP) in a standard multi-layer low temperature co-fired ceramic (LTCC) technology. A compact 14 GHz GaAs MESFET-based transmitter module integrated with an embedded bandpass filter was built on LTCC 951AT tapes. The up-converter MMIC integrated with a voltage controlled oscillator (VCO) exhibits a measured up-conversion gain of 15 dB and an IIP3 of 15 dBm, while the power amplifier (PA) MMIC shows a measured gain of 31 dB and a 1-dB compression output power of 26 dBm at 14 GHz. Both MMICs were integrated on a compact LTCC module where an embedded front-end band pass filter (BPF) with a measured insertion loss of 3 dB at 14.25 GHz was integrated. The transmitter module is compact in size (400 x 310 x 35.2 mil^3), however it demonstrated an overall up-conversion gain of 41 dB, and available data rate of 32 Mbps with adjacent channel power ratio (ACPR) of 42 **dB**. These results suggest the feasibility of **building** highly SOP integrated RF front ends for microwave and millimeter wave applications (*12 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); E (Mechanical & Production Engineering)
Descriptors: band-pass filters; ceramic packaging; field effect MIMIC; field effect MMIC; losses; MESFET integrated circuits; MMIC frequency convertors; MMIC oscillators; MMIC power amplifiers; radio transmitters; voltage-controlled oscillators
Identifiers: LTCC-based transmitter module; Ku-band; **3D**-deployed RF front-end **system**-on-package; MESFET-based transmitter module; embedded bandpass filter; up-converter MMIC; VCO; up-conversion gain; IIP3; millimeter wave applications; microwave applications; power amplifier; compression output power; band pass filter; insertion loss; adjacent channel power ratio; 14 GHz; 15 dB; 31 dB; 3 dB; 32 Mbit/s
Classification Codes: B1350H (Microwave integrated circuits); B1220 (Amplifiers); B1230B (Oscillators); B1290B (Convertors); B2570H (Other field effect integrated circuits); B0170J (Product packaging); E1810 (Packaging)
Numerical Indexing: frequency: 1.4E+10 Hz; gain: 1.5E+01 dB; gain: 3.1E+01 dB; loss: 3.0E+00 dB; bit rate: 3.2E+07 bit/s
INSPEC Update Issue: 2003-002

28/5/1 (Item 1 from file: 99)
DIALOG(R)File 99: Wilson Appl. Sci & Tech Abs

1633664 **H.W. Wilson Record Number:** BAST98017040
Landfalling tropical cyclones: forecast problems and associated research opportunities

Augmented Title: meeting of 5th Prospectus Development Team, Apr. 30-May 2, 1996
Marks, Frank D ; Shay, Lynn K
Bulletin of the American Meteorological Society v. 79 (Feb. '98) p. 305-23
Document Type: Symposium **ISSN:** 0003-0007 **Language:** English **Record Status:** Corrected or revised record

Abstract: The Fifth Prospectus Development Team of the U.S. Weather Research Program was charged to identify and delineate emerging research opportunities relevant to the prediction of local weather, flooding, and coastal ocean currents

associated with landfalling U.S. hurricanes specifically, and tropical cyclones in general. Central to this theme are basic and applied research topics, including rapid intensity change, initialization of and parameterization in dynamical models, coupling of atmospheric and oceanic models, quantitative use of satellite information, and mobile observing strategies to acquire observations to evaluate and validate predictive models. To improve the necessary understanding of physical processes and provide the initial conditions for realistic predictions, a focused, comprehensive **mobile** observing **system** in a translating storm-coordinate system is required. Given the development of proven instrumentation and improvement of existing **systems**, **three- dimensional** atmospheric and oceanic **datasets** need to be acquired whenever major hurricanes threaten the United States. The spatial context of these focused **three-dimensional datasets** over the storm scales is provided by satellites, aircraft, expendable probes released from aircraft, and coastal (both fixed and mobile), moored, and drifting surface platforms. To take full advantage of these new observations, techniques need to be developed to objectively analyze these observations, and initialize models aimed at improving prediction of hurricane track and intensity from global-**scale** to mesoscale dynamical **models**. Multinested **models** allow prediction of all **scales** from the global, which determine long-term hurricane motion to the convective scale, which affect intensity. Development of an integrated analysis and model forecast **system** optimizing the use of **three-dimensional** observations and providing the necessary forecast skill on all relevant spatial scales is required. Detailed diagnostic analyses of these datasets will lead to improved understanding of the physical processes of hurricane motion, intensity change, the atmospheric and oceanic boundary layers, and the air-sea coupling mechanisms. The ultimate aim of this effort is the construction of real-time analyses of storm surge, winds, and rain, prior to and during landfall, to improve warnings and provide local officials with the comprehensive information required for recovery efforts in the hardest hit areas as quickly as possible. Reprinted by permission of the publisher.

Descriptors: Cyclone forecasting; Real time computing ;

28/5/2 (Item 1 from file: 2)
DIALOG(R)File 2: INSPEC

07467118
Title: 1.7 volt, DC to 15 GHz differential amplifier module
Author(s): Juhola, T.; Kerzar, B.; Mokhtari, M.; Eastman, L.F.
Author Affiliation: Dept. of Electron., R. Inst. of Technol., Kista, Sweden
Book Title: Pan Pacific Microelectronics Symposium. Proceedings of Technical Program
Inclusive Page Numbers: 200-9
Publisher: Surface Mount Technol. Assoc, Edina, MN
Country of Publication: USA
Publication Date: 1999
Conference Title: Proceedings of Pan Pacific Microelectronics Symposium
Conference Date: 2-5 Feb. 1999
Conference Location: Kauai, HI, USA
Conference Sponsor: Surface Mount Technol. Assoc
Number of Pages: 424
Language: English
Document Type: Conference Paper (PA)
Treatment: Application (A); Practical (P); Experimental (X)
Abstract: A high performance packaging approach for state-of-the-art high frequency ICs has been adopted by creating fully planar carrier-interconnect surfaces for embedded chips on the substrate. The structure is suitable for several tens of Gb/s in ICs for fiber optical communication and microwave and mm-wave **wireless systems**. A 1.7 V, DC to 15 GHz differential amplifier module was designed and studied to demonstrate the techniques being developed (Mokhtari et al. Int. J. Analog ICs and Sig. Proc. pp 109-121, 1997). Three substrate carrier layouts were generated for up to 30 GHz with <1 **dB**/cm attenuation. S-**parameter measurements** for through **structures** are used for modelling. A comparison of a coplanar waveguide approach with a microstrip solution gave an optimised structure with respect to constraints on connector formation and signal integrity. In order to preserve chip frequency characteristics, bond wires must be <0.3 nH. Standard IC processing for carrier interconnects lower pad sizes significantly and I/O-parasitics are minimised. To convert material and geometrical characteristics to equivalent electronic **models**, **3D** EM simulators were used in parallel with experiments. Different housings were designed and manufactured and modifications implemented. The carrier is based on a >=50 mum

thick isolating layer to separate interconnects from the bulk/ground plane. The method involves micromachining and is to be used for MCMs. Low roughness Au-Cu-Au carrier interconnects are made using modified e-gun, sputtering and lift-off steps. The extremely low surface roughness lowers losses and common IC processing methods lower final module cost (*26 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); E (Mechanical & Production Engineering)
Descriptors: circuit simulation; coplanar waveguides; differential amplifiers; electron beam applications; integrated circuit interconnections; integrated circuit layout; integrated circuit modelling; integrated circuit packaging; micromachining; microstrip circuits; microwave integrated circuits; multichip modules; S-**parameters**; sputter etching
Identifiers: differential amplifier module; packaging; high frequency ICs; planar carrier-interconnect surfaces; embedded chips; fiber optical communication; mm-wave **wireless systems**; microwave **wireless systems**; substrate carrier layouts; attenuation; S-**parameter** measurements; modelling; coplanar waveguide approach; microstrip solution; optimised structure; connector formation; signal integrity; chip frequency characteristics; bond wires; IC processing; carrier interconnects; pad size ; I/O-parasitics; geometrical characteristics; material characteristics; equivalent electronic **models**; **3D** EM simulators; housings; housing modifications; isolating layer; interconnects; bulk/ground plane; micromachining; MCMs; Au-Cu-Au carrier interconnects; modified e-gun step; modified sputtering step; modified lift-off step; surface roughness; IC processing methods; module cost; 1.7 V; 0 Hz to 15 GHz; 30 GHz; 50 micron; Au-Cu-Au
Classification Codes: B0170J (Product packaging); B2250 (Multichip modules); B1220 (Amplifiers); B1350H (Microwave integrated circuits); B1130B (Computer-aided circuit analysis and design); B0170G (General fabrication techniques); B2575F (Fabrication of micromechanical devices); B1320 (Waveguide and stripline components); B1310 (Waveguides and striplines); E1520A (Machining); E1520N (Surface treatment and coating techniques); E1810 (Packaging)
Chemical Indexing:
Au-Cu-Au/int - Au/int - Cu/int - Au/el - Cu/el
Numerical Indexing: voltage: 1.7E+00 V; frequency: 0.0E+00 to 1.5E+10 Hz; frequency: 3.0E+10 Hz; size: 5.0E-05 m
INSPEC Update Issue: 2000-002

28/5/3 (Item 2 from file: 2)
DIALOG(R)File 2: INSPEC

07339055
Title: SCALC: low-cost microwave network analysis and optimisation
Author(s): Blackwell, R.P.; White, I.F.
Author Affiliation: IFW Tech. Services, Abingdon, UK
Book Title: IEE Colloquium Effective Microwave **CAD** Tools (Ref. No.1999/064)
Inclusive Page Numbers: 5/1-5
Publisher: IEE, London
Country of Publication: UK
Publication Date: 1999
Conference Title: IEE Colloquium Effective Microwave CAD Tools
Conference Date: 24 May 1999
Conference Location: London, UK
Conference Sponsor: IEE
Number of Pages: 60
Language: English
Document Type: Conference Paper (PA)
Treatment: Theoretical or Mathematical (T)
Abstract: SCALC is low-cost analysis and optimisation package for linear (small-signal) **RF networks**. It makes extensive use of S- **parameters**, and thus SCALC is particularly suitable for applications in the VHF to microwave region. SCALC can analyse networks of up to 20 circuit elements, comprising passive components (with parasitic reactances and finite Q) and active components that are characterised by files of frequency-dependent S-**parameter** data. The results of an SCALC analysis are also S-**parameters**, which can be saved to similar **datafiles**, and can later be recalled into a higher-level system analysis. Unlike most low-cost analysis packages, SCALC includes a powerful optimiser. This paper will introduce the main features of SCALC and present some simple examples of its use (*1 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering)

Descriptors: circuit analysis computing; circuit optimisation; microwave circuits; S-**parameters**
Identifiers: SCALC software package; microwave network analysis; optimisation; linear small-signal **RF network**; S-**parameters**
Classification Codes: B1350 (Microwave circuits and devices); B1130B (Computer-aided circuit analysis and design); C7410D (Electronic engineering computing)
INSPEC Update Issue: 1999-034

28/5/4 (Item 3 from file: 2)
DIALOG(R)File 2: INSPEC

06772666
Title: Three dimensional surface reconstruction with the Zeiss photogrammetric industrial measurement system InduSURF Digital
Author(s): Kludas, T.
Author Affiliation: Carl Zeiss, Oberkochen, Germany
Book Title: 28th International Symposium on Automotive Technology and Automation. Proceedings for the Dedicated Conference on Mechatronics - Efficient Computer Support for Engineering, Manufacturing, Testing and Reliability
Inclusive Page Numbers: 473-9
Publisher: Automotive Automation, Croydon
Country of Publication: UK
Publication Date: 1995
Conference Title: Proceedings of Conference on Mechatronics - Efficient Computer Support for Engineering, Manufacturing, Testing and Reliability
Conference Date: 18-22 Sept. 1995
Conference Location: Stuttgart, Germany
Editor(s): Soliman, J.I.; Roller, D.
ISBN: 0 947719 72 5
Number of Pages: 810
Availability: Automotive Automation Ltd, 42 Lloyds Park Avenue, Croydon, CRO 5SB, UK
Language: English
Document Type: Conference Paper (PA)
Treatment: Application (A); Practical (P)
Abstract: Industry calls for easy-to-operate optical measuring systems featuring a high degree of automation and top accuracy, which allow complicated industrial problems to be solved in a short time using digital CCD cameras and photogrammetric image processing algorithms. The new InduSURF system is based on the **digital image**. Taken with **digital** sensors of a high resolution such as the UMK-SCAN or JenScan, it is an essential factor of effective operation. The main fields of application are the modelling and design departments of the automotive industry. The great advantage are the short object scanning time and the fully **automatic** computation of the **three dimensional database** as well as the independence of the object size. InduSURF Digital is a mobile non-contact measuring system working only with CCD cameras and **computer** hardware. The results are **three dimensional** data such as point clouds, profiles or cut sections in the superordinate reference coordinate system. The information thus received forms the basis for further **CAD**/CAM/CIM processing performing surface reconstruction or CNC programming. The data interfaces are VDA-FS, ASCII formatted or DXF polylines (*6 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering); E (Mechanical & Production Engineering)
Descriptors: automobile industry; **CAD**; **CAD/CAM**; CCD image sensors; computer integrated manufacturing; image processing; image processing equipment; photogrammetry; surface reconstruction
Identifiers: three dimensional surface reconstruction; Zeiss photogrammetric industrial measurement system; InduSURF Digital; optical measuring systems; digital CCD cameras; photogrammetric **image** processing algorithms; **digital** sensors; automotive industry; **mobile** noncontact measuring **system**; point clouds; profiles; cut sections; superordinate reference coordinate system; **CAD**/CAM/CIM processing; CNC programming
Classification Codes: B7220 (Signal processing and conditioning equipment and techniques); B6140C (Optical information, image and video signal processing); B7230G (Image sensors); C5530 (Pattern recognition and computer vision

equipment); C5260B (Computer vision and image processing techniques); C7480 (Production engineering computing); C7410H (Computerised instrumentation); E0410D (Industrial applications of IT); E1400 (Design); E1510 (Manufacturing systems); E1640 (Instrumentation); E3650A (Automobile industry)
INSPEC Update Issue: 1997-048

Dialog eLink: USPTO Full Text Retrieval Options
28/5/5 (Item 4 from file: 2)
DIALOG(R)File 2: INSPEC

06503004
Title: Review on the status of optical interconnect technology
Author(s): Neff, J.A.
Author Affiliation: Center for Optoelectron. Comput. Syst., Colorado Univ., Boulder, CO, USA
Journal: Proceedings of the SPIE - The International Society for Optical Engineering , vol.2848 , pp.106-17
Publisher: SPIE-Int. Soc. Opt. Eng
Country of Publication: USA
Publication Date: 1996
Conference Title: Materials, Devices, and Systems for Optoelectronic Processing
Conference Date: 5-6 Aug. 1996
Conference Location: Denver, CO, USA
Conference Sponsor: SPIE
ISSN: 0277-786X
SICI: 0277-786X(1996)2848L.106:RSOI;1-7
CODEN: PSISDG
U.S. Copyright Clearance Center Code: 0 8194 2236 3/96/$6.00
Language: English
Document Type: Conference Paper in Journal (PA)
Treatment: Application (A); General or Review (G); Practical (P)
Abstract: The emergence of parallel switching and computational architectures are being technologically constrained by conventional electrical interconnects. The parallel nature of these new architectures have shifted the burden for increased throughput from increasing device speeds (conventional serial architectures) to increasing the throughput of the communications between the many parallel switching nodes (SNs) or processing elements (PEs). Some of the applications driving this demand are: video-on-demand (VOD), large **database** machines (DBM), high- **definition** television (HDTV), control of large **cellular** communication **networks**, real-time graphics, weather and resource modeling, highly parallel communications with peripheral devices (e.g. archival memory), video conferencing, telepresence (e.g. remote surgery and health care monitoring), and 3D display. Optical interconnects can ameliorate the inherent interconnect limitations of electronics for these emerging digital parallel systems. This paper reviews the status of optical interconnects (*12 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
Descriptors: computer graphics; **database** machines; health care; high **definition** television; information retrieval systems; interactive television; meteorology; optical fibre communication; optical interconnections; parallel processing; real-time **systems**; surgery; teleconferencing; telecontrol; **three-dimensional** displays
Identifiers: optical interconnect technology; parallel switching; computational architectures; electrical interconnects; 3D display; serial architectures; communications throughput; parallel switching nodes; parallel processing elements; video-on-demand; large **database** machines; high- **definition** television; **cellular** communication **network** control; real-time graphics; weather modeling; resource modeling; parallel communications; remote health care monitoring; archival memory; video conferencing; telepresence; remote surgery
Classification Codes: B4270 (Integrated optoelectronics); B4125 (Fibre optics); B6260 (Optical communication); B6430C (High definition television); B6210P (Teleconferencing); B6210J (Telemetry); B7520 (Patient care and treatment); B7260 (Display technology)
INSPEC Update Issue: 1997-008

Copyright: 1997, IEE

Dialog eLink: USPTO Full Text Retrieval Options
34/5/4 (Item 4 from file: 2)
DIALOG(R)File 2: INSPEC

04664460
Title: New ways in coordinate measurement. Mobile 3D-measurement systems in the industrial environment
Author(s): Sondermann, J.P.; Nimz, P.
Journal: ZWF Zeitschrift fur Wirtschaftliche Fertigung und Automatisierung , vol.85 , no.4 , pp.210-15
Country of Publication: West Germany
Publication Date: April 1990
ISSN: 0932-0482
CODEN: ZZWAEM
Language: German
Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: **In building** machines, plants and automobiles, industrial measuring systems are of increasing significance. Measurement techniques based on photogrammetric or geodetic principles require new knowledge on the part of mechanical engineers. Mobile **3D**-coordinate measurement **systems**, e.g. electronic theodolites, are becoming commonplace in the workshops. The authors describe how manifold the applications in automotive manufacture are now (*7 refs.*)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering); E (Mechanical & Production Engineering)
Descriptors: industrial plants; measurement systems; spatial variables measurement
Identifiers: **mobile** measurement **systems**; coordinate measurement; industrial measuring systems; electronic theodolites; automotive manufacture
Classification Codes: B7320C (Spatial variables measurement); C3350 (Control in industrial production systems); C3210Z (Other control instrumentation and measurement systems); C3120C (Spatial variables control); E1530 (Manufacturing facilities); E1550 (Control technology and theory); E1620 (Measurement); E1640 (Instrumentation)
INSPEC Update Issue: 1990-015

B. NPL Files, Full-text

```
File  20:Dialog Global Reporter 1997-2009/Jul 15
         (c) 2009 Dialog
File  15:ABI/Inform(R) 1971-2009/Jul 15
         (c) 2009 ProQuest Info&Learning
File 610:Business Wire 1999-2009/Jul 16
         (c) 2009 Business Wire.
File 810:Business Wire 1986-1999/Feb 28
         (c) 1999 Business Wire
File 613:PR Newswire 1999-2009/Jul 16
         (c) 2009 PR Newswire Association Inc
File 813:PR Newswire 1987-1999/Apr 30
         (c) 1999 PR Newswire Association Inc
File 634:San Jose Mercury  Jun 1985-2009/Jul 14
         (c) 2009 San Jose Mercury News
File 624:McGraw-Hill Publications 1985-2009/Jul 16
         (c) 2009 McGraw-Hill Co. Inc
```

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File   9:Business & Industry(R) Jul/1994-2009/Jul 15
         (c) 2009 Gale/Cengage
File 275:Gale Group Computer DB(TM) 1983-2009/Jun 17
         (c) 2009 Gale/Cengage
File 621:Gale Group New Prod.Annou.(R) 1985-2009/Jun 09
         (c) 2009 Gale/Cengage
File 636:Gale Group Newsletter DB(TM) 1987-2009/Jun 23
         (c) 2009 Gale/Cengage
File  16:Gale Group PROMT(R) 1990-2009/Jun 23
         (c) 2009 Gale/Cengage
File 160:Gale Group PROMT(R) 1972-1989
         (c) 1999 The Gale Group
File 148:Gale Group Trade & Industry DB 1976-2009/Jun 30
         (c) 2009 Gale/Cengage


Set     Items   Description
S1     427431   CAD OR COMPUTER(1W)AIDED(1W)(DESIGN OR ENGINEERING) OR CAGD
S2     334227   (3D OR (3 OR THREE)()(D OR DIMENSION??)) (5N) (COMPUTER? OR
SOFTWARE OR PROGRAM? ? OR APP OR APPS OR AUTOMAT?? OR SYSTEM? ? OR APPLICATION? ?
OR INTERFACE? ? OR APPT? ? OR SOLUTION? ? OR PLATFORM? ? OR SUITE? ? OR PACKAGE? ?
OR MODEL? OR TOOL? ?)

S3     687000   S1 OR S2
S4      20510   (MESH OR WIRELESS OR MOBILE OR CELLULAR OR RADIO OR 3G OR BROADBAND
OR RF) (2W) (NETWORK? ? OR SYSTEM? ? OR ENVIRONMENT OR LAN OR LANS OR MAN OR MANS
OR (METROPOLITAN OR LOCAL)()AREA()NETWORK? ?) OR WLAN OR WLANS OR WIMAX OR WIMAXS

S5       6058   S4 (10N) (ASSEMBL??? OR (PUT OR PUTS OR PUTTING OR SET OR
SETTING)()(UP OR IN OR TOGETHER) OR CONSTRUCT??? OR INSTALL? OR HOOK()UP OR HOOKUP
OR HOOKUPS OR PLAC??? OR PLACEMENT OR DEPLOY??? OR DEPLOYMENT OR LAUNCH??? OR
ARRANGEMENT OR ARRANG??? OR DISTRIBUT??? OR FORMATION? ? OR GROUPING OR
IMPLEMENTATION OR IMPLEMENT??? OR ORGANIZATION OR ORGANIZ??? OR POSITION??? OR
STATIONING OR DESIGN???)

S6      31239   (DATABASE OR DATABASES OR DATABANK OR DATABANKS OR DATATABLE OR
DATATABLES OR DATASET OR DATASETS OR DATAFILE OR DATAFILES OR (DATA OR INFORMATION
OR KNOWLEDGE)()(BASE OR BASES OR BANK OR BANKS OR SET OR SETS OR FILE OR FILES OR
TABLE OR TABLES OR NETWORK? ?) OR DB OR KNOWLEDGEBASE OR KNOWLEDGEBASES OR RDBMS OR
DBMS OR OODB) (10N) (3D OR (3 OR THREE)()(D OR DIMENSION??) OR BUILDING? ? OR
STRUCTURE? ? OR FACILIT??? OR REAL()ESTATE OR APARTMENT? ? OR CONDOMINIUM? ? OR
CONDO? ? OR SKYSCRAPER? ? OR HIGH()RISE OR HIGHRISE? ? OR CONSTRUCTION OR TOWER? ?
OR ACADEMIC()HALL? ? OR ENVIRONMENT?? OR AREA? ? OR SITE? ? OR TERRAIN OR
INFRASTRUCTURE OR BASE()STATION? ? OR ANTENNA OR MEASUREMENT? ? OR PATH? ? OR
SIGNAL? ? OR SPECIFICATION? ? OR DEFINITION? ? OR PARAMETER? ? OR CRITERIA? ? OR
PROPERTIES OR GEOMETR??? OR ELEVATION? ? AND LAND()USE OR HEIGHT? ?)

S7     162712   DEFINITION? ? OR PARAMETER? ? OR CRITERIA? ? OR PROPERT???
S8       6460   IN()BUILDING
S9      35952   (SCAL??? OR RESIZ??? OR STRETCH??? OR PROPORTIONAL?? OR RESAMPL???
OR ENLARG??? OR REDUC??? OR SHRINK??? OR COMPRESS??? OR EXPAND??? OR INCREAS??? OR
DECREAS??? OR SMALLER OR LARGER OR SIZE) (5N) (IMAGE? ? OR MODEL? ? OR PICTURE? ?
OR PHOTO? ? OR PHOTOGRAPH? ? OR DRAWING? ? OR MAP? ?)

S10     39846   RASTER()IMAGE? ? OR OPENRASTER OR BITMAP? ? OR PIXMAP? ? OR GIF OR
JPG OR BMP OR JPEG OR (DIGITAL OR AUTOCAD) (2N) (IMAGE? ? OR MODEL? ? OR PICTURE? ?
```

```
OR PHOTO? ? OR PHOTOGRAPH? ? OR DRAWING? ?) OR (INTERNET OR ONLINE OR ON()LINE OR
WEB OR ELECTRONIC OR CYBER) (5N) MAP? ?

S11          3   AU=(RAPPAPORT, T? OR RAPPAPORT T? OR RAPPAPORT (1N) (T OR THEODORE)
OR SKIDMORE, R? OR SKIDMORE R? OR SKIDMORE (1N) (R OR ROGER))

S12       4702   S3 (S) S4
S13        119   S12 (S) S6
S14         31   S13 (S) (S7 OR S8 OR S9 OR S10)
S15          4   S14 NOT PY>1999
S16          4   RD  (unique items)
S17         88   S13 NOT S14
S18         22   S17 NOT PY>1999
S19         14   RD  (unique items)
S20        133   S4 (S) S8
S21         23   S20 (S) S3
S22          0   S21 NOT PY>1999
S23       6460   S3 AND S8
S24        498   S23 AND S4
S25        113   S24 AND S6
S26         46   S25 NOT PY>1999
S27         39   RD  (unique items)
S28          4   S27 (S) S12
S29       1203   S12 (S) S5
S30         34   S29 (S) S6
S31          9   S30 NOT PY>1999
S32          3   S31 NOT (S16 OR S19 OR S28)
S33        638   S1 (S) S5
S34         13   S33 (S) S6
S35          8   S34 NOT PY>1999
S36          1   S35 NOT (S16 OR S19 OR S28 OR S32)
S37          1   S36 AND S10
S38          0   S37 (S) S9
S39       2420   S9 (S) S10
S40        657   S39 (S) S3
S41         17   S40 (S) S4
S42          2   S41 NOT PY>1999
S43          0   S42 (S) S6
S44          3   S11 AND (S3 OR S4)
```

16/3,K/1 (Item 1 from file: 9)
DIALOG(R)File 9: Business & Industry(R)

01151583 Supplier Number: 23761122
SPOT, ISTAR RELEASE DATABASES
(Spot Image Corp and Istar launched a US and global mapping product for wireless communications system planning)

Wireless Week , p 34
January 06, 1997
Document Type: Journal; News Brief **ISSN:** 1085-0473 (United States)
Language: English **Record Type:** Fulltext
Word Count: 64

TEXT:
Spot Image Corp. and Istar unveiled a U.S. and worldwide mapping product for **wireless** communications **system** planning. HotSPOTS features geographic information, satellite imagery, **three-dimensional digital** elevation **models**, transportation and clutter/morphology **databases**.

The companies said the solution can help manufacturers and operators save money in post-design testing, infrastructure costs and re-engineering.

HotSPOTS includes multilevel map...

16/3,K/4 (Item 1 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB

02176598 **Supplier Number:** 03513447 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Software extends the reach of mechanical CAD.

Krouse, John K.
Machine Design , v56 , p66(5)
Nov 8 , 1984
ISSN: 0024-9114
Language: ENGLISH
Record Type: FULLTEXT
Word Count: 2482 **Line Count:** 00206
...most powerful analytical techniques for determining stress, deflection, and other characteristics in structures. In this technique, a finite-element model represents the part with a **mesh network** of elements that divide the structure into individual chunks more readily handled by the computer. After analyzing the segments, the computer combines the results to...

19/3,K/5 (Item 1 from file: 9)
DIALOG(R)File 9: Business & Industry(R)

01668685 Supplier Number: 24414624 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**
SOFTWARE COMPANY OFFERS NETWORK MANAGEMENT TOOLS
(Roam Translation Tool and other overlay software products are offered by 3D Cellular)

RCR Radio Communications Report , p 18
October 12, 1998
Document Type: Journal **ISSN:** 0744-0618 (United States)
Language: English **Record Type:** Fulltext
Word Count: 888

ABSTRACT:
3D Cellular is a **software** concern that offers products created for wireless carriers that have Autoplex **wireless systems** from Lucent Technologies. The products, such as the Roam Translation Tool, **Antenna** Face Tool and Digit Translation Tool, allow carrier to manage **database** information and determine defects within the network. A limited partnership, with US headquarters in Elyria, OH, 3D Cellular is approximately four months old. The company... ...supplies a quick method to update and maintain accurate roaming databases. The Antennas Face Tool permits view of the face code information and other cell **site** RF information **databases** for Lucent. The article provides additional detailed information on **3D** Cellular and

its offerings.

19/3,K/7 (Item 1 from file: 275)
DIALOG(R)File 275: Gale Group Computer DB(TM)

02038648 **Supplier Number:** 19146695
A new foundation. (new technological developments in DBMS) (Technology Information)

Ozsu, M. Tamer
Database Programming & Design , v10 , n3 , p38(5)
March , 1997
ISSN: 0895-4518
Language: English **Record Type:** Abstract

Abstract: DBMSs have to adapt to new technological challenges such as the use of **database** technology in **CAD**/CAM application domains. In such **environments** data objects are complex and include multimedia documents containing audio, video, text and images. The individual objects are large needing more than 1MB of storage... ...at best only act as metadata holder of multimedia database. It is necessary to develop capabilities to query such databases. Other technological advancements that affect **database** management include the emergence of mobile computing **environments**, **broadband networks** and the Internet. DBMSs have to fulfill the requirements of these new technological applications by developing both architectural and modeling improvements.
Abstract:

19/3,K/13 (Item 3 from file: 636)
DIALOG(R)File 636: Gale Group Newsletter DB(TM)

01085371 **Supplier Number:** 40712798 **(USE FORMAT 7 FOR FULLTEXT)**

HEIGHTENED ROLE FOR FIXED NETWORK AND INTELLIGENT DATABASES IN NEW PERSONAL COMMUNICATIONS NETWORK
Industrial Communications , n 10 , p N/A
March 10 , 1989
Language: English **Record Type:** Fulltext
Document Type: Newsletter ; Trade
Word Count: 207
-
...the additional elements" which provide the signaling and transmission capabilities between the mobile and fixed customer, namely the mobile network.
The fixed network and the **mobile network** cooperate in the establishment, control and release of calls, he noted. Public **mobile systems** will continue to exploit enabling technologies such as telecommunications **database** management, **signal** processing, **computer-aided design**, coupled with the realization of large and complex integrated circuits and battery technology.

19/3,K/14 (Item 1 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB

08900914 **Supplier Number:** 18421639
RF telemetry makes complex surveys quick, cost-effective. (radio frequency)

Rigdon, H.K.
World Oil , v217 , n5 , p80(2)
May , 1996
ISSN: 0043-8790
Language: English
Record Type: Fulltext; Abstract
Word Count: 778 **Line Count:** 00066

Text:
...acquisition through the use of Radio Frequency (RF) telemetry acquisition systems. By eliminating need for data cables, RF telemetry systems, such as the Opseis Eagle **System**, can record **3-D** data volumes using proven 2-D recording geometries that are a natural extension of one-dimensional (split spread) design.

28/3,K/3 (Item 1 from file: 9)
DIALOG(R)File 9: Business & Industry(R)

01254238 Supplier Number: 23877021 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**
My Oh My Ohio
(The $173 mil, 800 MHz trunked multiagency radio communications systems (MARCS) will enhance public safety)

Wireless Week , p 14A+
April 28, 1997
Document Type: Journal **ISSN:** 1085-0473 (United States)
Language: English **Record Type:** Fulltext
Word Count: 1798 **(USE FORMAT 7 OR 9 FOR FULLTEXT)**

TEXT:
...solution where all of the subsystems work in concert with each others subsystem," Neal said.

In addition to Motorola, subcontractors are SCC, for the multiagency **CAD** and records management system; ITT, for SONIC site construction and installation, and system maintenance for all nonMotorola equipment; and Alliance, which will provide message switching for the data system and **mobile** data **system** application software.

MARCS is one of the most ambitious projects he's ever seen, Neal said. Credit should go to the state of Ohio and...

32/3,K/1 (Item 1 from file: 636)
DIALOG(R)File 636: Gale Group Newsletter DB(TM)

02951109 **Supplier Number:** 46005343 **(USE FORMAT 7 FOR FULLTEXT)**

CONTRACT SIDEWIRE...
Telecomworldwire , p N/A
Dec 14 , 1995
Language: English **Record Type:** Fulltext
Document Type: Newsletter ; Trade
Word Count: 632
-
...support, linking to streamline the efficiency of education, social services, highways, environmental services, fire and rescue, economic development and libraries and museums... ECS, a British **CAD**/CAM specialist company, has installed a Graftek **CAD** system for PLM Redfearn, the UK's leading glass packaging manufacturer at its headquarters in Barnsley, UK in a GBP85,000 contract, replacing seven Meteor workstations and replaced them with Hewlett Packard 715/64 machines each with 32Mb of RAM and a new network infrastructure... NORTHERN TELECOM GSM **Wireless Networks** has acquired a Smallworld GIS licence for the **design** of its GSM/PCN **cellular networks**, **arranged** through Serna Group in France... PINACL SYSTEMS has completed a network electronics and cabling installation for Salt Union at its Winsford, UK **site** 600 feet underground, installing both voice and **data networks** based on unshielded Category 5 cabling... THE SECURITIES AND INVESTMENT BOARD in the UK has appointed Teledata Ltd to provide a dedicated telephone enquiry service...

32/3,K/2 (Item 1 from file: 16)
DIALOG(R)File 16: Gale Group PROMT(R)

03855604 **Supplier Number:** 45527514 **(USE FORMAT 7 FOR FULLTEXT)**

Web threatens groupware in global enterprise nets
CommunicationsWeek International , p 26
May 8 , 1995
Language: English **Record Type:** Fulltext
Document Type: Magazine/Journal ; Trade
Word Count: 647
-
...technical databases on 100 internal Web servers, mostly in Europe.
Ericsson's mobile phone engineers, for example, use browsers to query internal and external technical **databases**, Ryan said. Engineers in Sweden use Web **sites** to provide documents and support for digital systems in Japan. And future Web features, such as Silicon Graphics Inc.'s **3-D** virtual reality **modeling** language, can help commercial agents and technicians alike better visualize and **design mobile systems**, he said.
Ericsson had trialed 100 Lotus Notes seats in Sweden, but Notes 'failed to spread and in some cases died,' Ryan said. The Notes...

32/3,K/3 (Item 1 from file: 148)
DIALOG(R)File 148: Gale Group Trade & Industry DB

05066607 **Supplier Number:** 10671189
25 tough integration problems & solutions. (tutorial)

Simpson, David; Livingston, Dennis; Nesdore, Paul
Systems Integration , v24 , n4 , p35(19)
April , 1991
Document Type: tutorial
ISSN: 1044-4262
Language: ENGLISH
Record Type: ABSTRACT

Abstract: ...user interfaces, redundant arrays of inexpensive disks (RAIDs) vs single, large expensive disks (SLEDs), Fiber Distributed Data Interface (FDDI), uninterruptible power supplies (UPSs), OS/2, **distributed database** management systems, **wireless local area networks** (LANs), graphics standards, downsizing mainframe **databases**, the Corporation for Open Systems International (COS) seal of approval, X.400 and X.500, fault tolerance and data security, the US National Security Agency...
Abstract:

42/3,K/1 (Item 1 from file: 275)
DIALOG(R)File 275: Gale Group Computer DB(TM)

02129294 **Supplier Number:** 20049736 **(Use Format 7 Or 9 For** FULL TEXT)
Multiplying machines. (digital signal processors to be 10 times more powerful at multiplying than microprocessors by 2010) (Technology Information)(Brief Article)

Levin, Carol
PC Magazine , v16 , n22 , p29(1)
Dec 16 , 1997
Document Type: Brief Article
ISSN: 0888-8507
Language: English **Record Type:** Fulltext
Word Count: 361 **Line Count:** 00032

...first commercial product using a DSP was Texas Instruments' Speak & Spell.

At a recent conference of top companies in the field, researchers speculated on future **applications**, including **3-D digital photography** and real-time video **compression** for cellular video phones and Web videoconferencing. According to Scarisbrick, video applications "will be eminently realizable in two to three years at the current rate...

...on the horizon are "world phones" that support multiple cellular standards, ultra-high-speed modems, high-capacity digital cameras, collision-avoidance radar in cars, and **mobile** ultrasound **systems** to transmit images via satellite.

Bell Labs, Hitachi, HNC Software, Motorola, Nortel, Philips Electronics, Siemens, and Texas Instruments are just a few of the companies

V. Additional Resources Searched

LexisNexis:

Used for assignee search.